

# IDEXX-PACS 4.2 Imaging Software

Operator's Guide



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The IDEXX Diagnostic Imaging Systems are intended for veterinary use only; they are not intended for human diagnostic use.



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# Getting Started

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Your IDEXX-PACS\* Imaging Software works with your IDEXX Diagnostic Imaging system to deliver diagnostic radiographs without film or chemical development.

In this chapter, you'll find information about:

- Using the Home window and finding a patient record
- How images are organized in order of study, series, and image
- How to determine which IDEXX Diagnostic Imaging system you have
- Accessing other programs, like VetConnect\* PLUS
- Logging off and switching users
- Keyboard shortcuts

**Tip:** To save this *Operator's Guide* to your computer, the network, or a CD, at the top of the PDF window, select **File > Save as**.

## Statement of Intended Use

The IDEXX Diagnostic Imaging systems are intended for veterinary use only; they are not intended for human diagnostic use. For a detailed list of species and settings, contact IDEXX Diagnostic Imaging Customer Support at 1-877-433-9948.

## About Your IDEXX Diagnostic Imaging Hardware

### Identifying Your Diagnostic Imaging System

There are two types of IDEXX Diagnostic Imaging systems—computed radiography (CR) and digital radiography (DR).

It's easy to determine which system you have:

**An IDEXX-CR\* system** uses a portable cassette containing a phosphor screen that replaces x-ray film. After you capture an image, you must insert the cassette into a scanner, which reads the digital x-ray image without chemical developing. The images are stored and viewed using the IDEXX-PACS\* software.

**An IDEXX-DR\* system** does not have a portable cassette or scanner. In a DR system the detector panel is attached to the underside of the radiography table. When you take an x-ray, the high-resolution detector plate is exposed to the x-ray source, and the x-rays are converted immediately into electrical signals that are read by the DR system and displayed on the monitor in just a few seconds.

### Cleaning and Maintenance Instructions

For technical specifications and for information on equipment maintenance, service, transportation, and storage for all IDEXX CR and DR systems, see the *IDEXX Diagnostic Imaging*

*Systems Hardware Guide* available on the Help  menu in IDEXX-PACS Software. The guide is also located in the folder where your IDEXX Diagnostic Imaging software is installed.

## System Requirements

Operating system requirements are slightly different for computers used to capture images versus computers used for viewing images.

### Minimum operating system requirements

- For capturing radiographs: Use only computers that are supplied by IDEXX.
- For viewing radiographs and using other IDEXX-PACS\* features: Use a computer running the Windows\* 7 Professional, Windows\* 8, Windows\* 10, or Windows\* Server 2012 operating system.
- To view a Patient CD created with the IDEXX-PACS software: Use a computer with home or business versions of the Windows\* XP, Windows\* Vista, Windows 7, Windows 8, or Windows 10 operating system. The Patient CD is not compatible with the Mac\* OS X\* operating system.

### Minimum hardware requirements

The IDEXX-PACS computer must meet these minimum requirements:

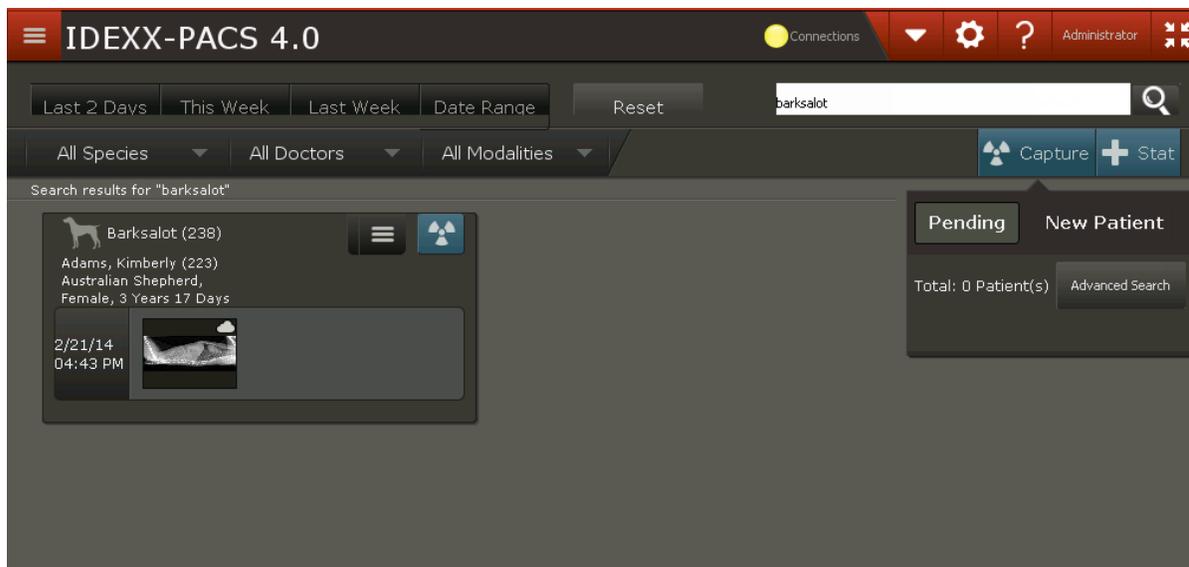
- 2 GHz dual-core 32-bit processor
- 2.0 GB RAM
- 20 GB free space on hard drive
- CD/DVD burner
- 128 MB graphics card
- 100 MB Ethernet port

## Using the IDEXX-PACS Home Window

### Using the Home Window on a Capture Station

From the IDEXX-PACS Home window on your image-capture computer you can:

- Find a patient record. See "Finding a Patient Record " on page 8.
- Use the Tools  button to:
  - Import DICOM® files and use DICOM query and retrieve.
  - Back up or archive your images.
  - Erase cassettes (for IDEXX I-Vision CR systems).
  - View the radiology log.
- Use the System Settings  button to set software options.
- Start an image capture request (if you did not start it from your practice management software). See "Starting the Capture Request from the IDEXX-PACS\* Software" on page 13 for more information.



Home window on capture station

### To minimize or resize the Home window:

In the upper right corner of the Home window, click **Resize**  to display minimize, resize, and close buttons.



### Using the Home Window on a Noncapture Computer

The IDEXX-PACS Home window displays image-capture tools **only** on computers designated as image-capture stations.

If a computer is not used for image capture, the Home window does not display Capture or STAT buttons or the Pending list. You can still use the Home window to select a patient record to view its images. You can also use the Patient button to add a new patient record and import images into it.

Computers are designated as either image-capture or viewing stations when your system is installed. To change a computer's designation, contact IDEXX Diagnostic Imaging Customer Support.

### Finding a Patient Record

#### To find a patient record and view images:

- In the Home window, search for patients either of these ways:
  - In the **Search** box, enter a patient or client name or ID and click .
  - OR
  - Click a time period (such as This Week), and then select an optional filter, such as a species.

A patient card is displayed for each patient found.



Patient card

- To open the patient record, click in the thumbnail area.

An image from the current study opens in the Image Viewer.

If there are no thumbnails in the patient card, clicking in the thumbnail area still opens the Image Viewer, so that you can import or capture images, update the patient record, and perform other tasks.

### Using the Patient Card

A patient card summarizes information about the patient and the study including:

- Patient demographic information
- Study name (the default name is the study date)
- Thumbnail images; each stack represents a series containing the indicated number of images of images in the series
- Paper clip if the study is associated with a telemedicine case; click the paperclip for details
- Heart icon  if the study includes an ECG file
- Menu with options to share, print, or save images
- Image capture button



A patient card. The study contains one series with two images.

### About Image, Series, and Study

Captured images are organized into a hierarchy as follows:

- Image—A single radiograph; the image name is the name of the shot, such as “THX - Lat”
- Series—A group of related images, usually of the same body part or region; the series name is the exam category, such as “Thorax-Routine”

- Study—A group of series that were captured at the same time; the study name is the date and time you began the capture process

### To change image, series, or study names:

Use the study panel to edit image details in the Image Viewer.

The DICOM standard requires series and study information to be recorded for every image, even if you take only a single radiograph. In that case, there will be a single image in the series and a single series in the study.

Because the terms "series" and "study" are part of the DICOM standard, you may encounter them when using other DICOM-compliant equipment, such as endoscopes or ultrasound machines.

### Accessing VetConnect\* PLUS, VetMedStat\*, and IDEXX Pet Health Network\* Pro

- VetConnect\* PLUS—All your IDEXX diagnostic results side-by-side
- VetMedStat\*—The website for IDEXX Telemedicine Consultants
- IDEXX Pet Health Network\* Pro—Easy-to-use tools for pet owner communication and education

### To access the web-based services:

1. In the Home window, click  in the upper left corner of the window.
2. Click the icon (not the name) of the website you want to visit.

If you don't have a logon, click the link on the logon page to create an account or to find contact information.

### Switching Users

If staff members have different levels of access to software features, the current user should log off before another staff member uses the system. For more information, see "Setting Up Staff Classifications" on page 88

**Note:** An "access denied" message is displayed if a user does not have access to a specific window or feature.

### To log off before switching users:

1. Click your user name in the upper right corner of the window, and then select **Log off**.
2. Click **OK**. The logon box is displayed so another user can log on.

### To exit the software:

1. Click your user name in the upper right corner of the window, and then select **Exit**. You are prompted to back up your system.
2. (Optional) Select backup options as needed.
3. Click **OK**.

## Shortcuts and Touch-Screen Gestures

### Windows\* Keyboard Shortcuts

The following shortcuts work with most Windows\*-based software.

Task	Shortcut
Close a menu	Click outside the menu.
Select a group of noncontiguous items	Hold down the CTRL key while clicking the individual items.
Select a group of contiguous items	Click the first item in the group, and then hold down the SHIFT key while clicking the last item in the group.
Deselect items	Hold down the CTRL key while clicking a selected item.
Select an area of an image	Hold down the mouse key while dragging the pointer across the area you want. This is called "click and drag."
Sort table information	Click the column name to sort by that column. Click the column name again to reverse the sort order.
Open folders	Click the plus sign (+).
Close folders	Click the minus sign (-).
Display drop-down lists	Click the down-arrow next to the list name.

### IDEXX-PACS\* Imaging Shortcuts

Imaging shortcuts let you move or enhance an image in the Image Viewer.

#### Notes:

- To use imaging shortcuts, you must first enable them as described below.
- Shortcuts involving the right mouse button do not work with touch-screen monitors.

#### To activate imaging shortcuts:

1. In the Home window, click .
2. On the left side of the System Settings window, click **User Settings**.
3. Select **Enable Imaging Shortcuts**.
4. Click **Save**.

Task	Shortcut
Rotate image 90° counterclockwise	Press the <b>A</b> key.
Rotate image 90° clockwise	Press the <b>S</b> key.
Change the window (contrast)	Hold down the left mouse button and move the mouse left and right (touch screen: drag finger left/right).
Change the level (brightness)	Hold down the left mouse button and move the mouse up and down (touch screen: drag finger up/down).
Return to original window/level settings	Double-click the left mouse button (touch screen: double tap).
Zoom	Hold down the right mouse button and move the mouse.
Return to original zoom (image fits in window)	Double-click the right mouse button.
Move a magnified area around the image	Hold down the SHIFT key, and click the right mouse button.

### Touch-Screen Gestures

Use these gestures if you have a touch-screen monitor.

Task	Gesture
Select an item	Tap once.
Select a group of contiguous items	Touch and drag to select the range of items.
Start a program from the desktop	Tap twice quickly.
Display a "right-click" menu	Hold one finger on the touch screen while you tap with a second finger.
Pan an image in the Image Viewer	Hold one finger on the image and drag left or right. (You can pan only when the image is larger than the window.)
Change the window/level (contrast/brightness)	Imaging shortcuts must be turned <b>on</b> . Hold two fingers on the image in the Image Viewer and drag left or right.
Enter text or number	Tap once in the data-entry box. An onscreen keyboard or number pad appears. Tap the letters or numbers.

# Capturing Images

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There are four steps in the image capture process:

1. Start the capture request from the IDEXX-PACS software **or** from your practice management system.
2. Select the radiographs you want to take.
3. Capture the radiograph(s), following the appropriate instructions in this chapter for your digital imaging system.
4. Review the radiographs. You can enhance, retake, or reprocess images, as needed.

You'll find basic instructions in this chapter. For additional information, see:

- Chapter 3, "Using Advanced Image Capture Tools" on page 28 for tools you can use to capture better radiographs.
- Chapter 4, "Viewing and Enhancing Images after Capture" on page 34 for tools you can use to enhance or annotate images after capture.

## Starting a STAT Image Request

**To start a STAT image request:**

1. In the IDEXX-PACS Home window, click .
2. At the bottom of the Add Shots window, select the species.
3. Select a body region, and then select individual shots (or click the series name to select an entire series). The capture window opens with the shots listed on the right.
4. After you capture the images, assign the images to the correct patient. For more information, see "Reassigning an Image" on page 52.

**Note:** If IDEXX-PACS software is integrated with Cornerstone software, the STAT image will be returned to Cornerstone as a "not requested" image. See your Cornerstone user manual for information on handling not-requested images.

## Starting the Capture Request from the IDEXX-PACS\* Software

**Note:** If your IDEXX-PACS Software is integrated with Cornerstone Software or another practice management system, start the image capture request from that system. See "Starting the Capture Request from Cornerstone\* or Other Integrated Software Systems" on page 14. If your IDEXX-PACS software is not integrated with your practice management system, follow instructions below.

**To start a capture request for an existing patient:**

1. In the IDEXX-PACS Home window, find the patient record, and in the patient card click .
2. Select the shots.

### To start a capture request for a new patient:

1. In the IDEXX-PACS Home window, click  **Capture**, and then click **New Patient**.
2. Enter the patient and client information, and then click **Save and Continue**.
3. Select the shots.

### To start a capture request from the Image Viewer:

1. Click  in the lower right corner of the Image Viewer to capture images for the current patient.
2. Select the shots.

## Starting the Capture Request from Cornerstone\* or Other Integrated Software Systems

Some practice management systems, such as Cornerstone\* Practice Management Software and AVImark\* software, can be closely integrated with your IDEXX Diagnostic Imaging software. If your systems are integrated:

- Start your radiograph requests from the practice management software. The requests will be sent automatically to the IDEXX-PACS software.
- Captured images will be returned automatically to the patient record and added to the patient invoice.

### To start the capture request:

Refer to your practice management system user guide. The steps depend on your system. After you start the request, you must select the request in the IDEXX-PACS software. See the next section for details.

### To fulfill a request from a practice management system:

1. In the IDEXX-PACS Home window, click the patient name in the **Pending** list. (If the list isn't visible, click  **Capture** to display it.)
2. If radiographs were not specified in the initial request, the Add Shots window opens; select the shots. See "Selecting the Shots" on page 15. If radiographs were specified in the request, the shots are already selected, and you can now capture the images. See "Capturing Images" on page 13.

**Tip:** You can also choose patients from the Census list, which contains the names of all patients currently checked-in through your practice management system.

## Starting the Capture Request Using Modality Worklist

The modality worklist feature enables your IDEXX Diagnostic Imaging software to communicate with any DICOM®-enabled practice information management system. Using modality worklist, you can:

- Start image-capture requests from the practice management system by adding them to a modality worklist queue. The requests appear on the IDEXX-PACS Pending list.
- Track the status of the requests from your practice management software.

**IMPORTANT:** To set up a modality worklist connection between IDEXX-PACS software and your practice management system, you must configure your practice management system as a remote DICOM server. See "Configuring Remote DICOM Servers or Modality Worklist Connections" on page 78.

#### To start the image request:

Refer to your practice management system user guide. The steps depend on your system.

**Important:** Always include notes that specify the shots to be taken.

#### To fulfill the image request:

1. In the Home window of the IDEXX-PACS software, click **Pending**, select the request from the **Pending List**, and then click **Continue**.
2. Look for the image request notes in the **Request Notes** box on the Add Shots window, and then select the specified shots. See "Selecting the Shots" on page 15.

#### If the request is not on the Pending list:

1. Above the **Pending** list, click **Advanced Search**.
2. Enter search criteria (patient name, patient ID, image source, status, and/or date), and then click **Search**.
3. View the status of the request in the **Status** column:
  - Scheduled—The request was created, but the capture process has not started.
  - Arrived—You will see this status only if your practice information management system uses it.
  - Ready—You will see this status only if your practice information management system uses it.
  - Started—You began the capture process but exited before capturing the images.
  - Discontinued—The request has been discontinued.
  - Completed—Radiographs have been captured.
4. To fulfill a request, select the request, and then click **Capture**.

Or

To cancel a request, select the request, and then click **Discontinue**.

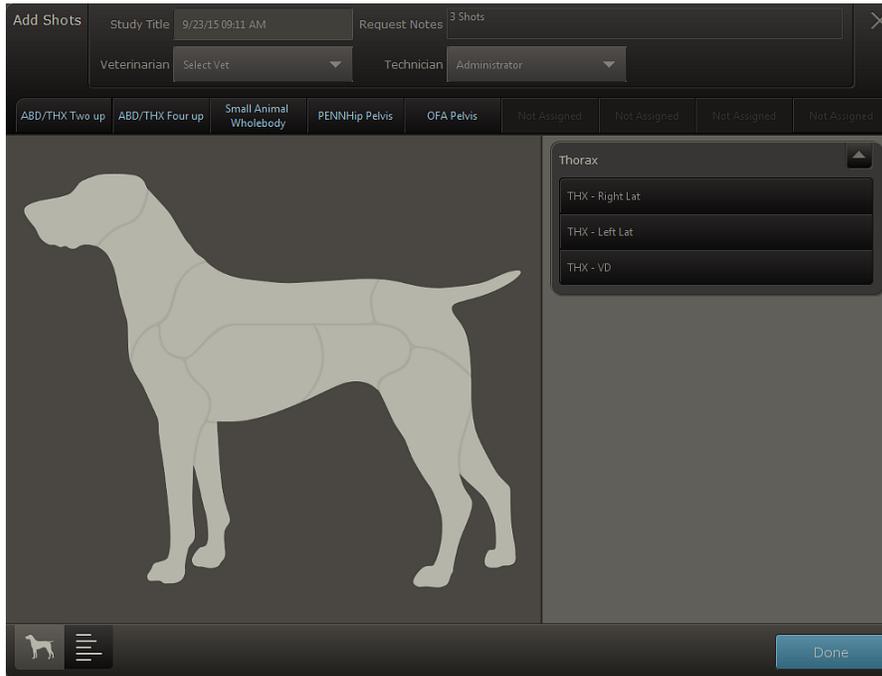
#### To monitor the modality worklist queue:

1. In the Home window, click  (button color may be different).
2. On the MWL row, click **Queue**.

## Selecting the Shots

The Add Shots window opens after you start an image-capture request.

In most cases, you see a species illustration called the Visual Shot Tree. (You will see a text list of species if the patient is not canine, feline, or equine.)



Visual Shot Tree

### To select shots from the Visual Shot Tree:

- For STAT patients that are not canine, select the correct species in the lower left corner of the window .
- In the **information panel** at the top of the window, review any request notes, and update study and other names as needed.
 

**Note:** These options are not available if the species is already defined in the patient record or if you are using an IDEXX-CR system without ClearCapture Dx\* software.
- Click an anatomical region to view available shots (or in a text list, click the small + signs to expand the categories).
- To select an entire series of shots, click the series name; to select specific shots, click the shot names.
- Repeat **steps 3–4** to add other shots. You can add shots in any order and can add the same shot more than once.
- Click **Done**. The selected shots are added to the list on the Capture window.
- (Optional) To select special shots, such as timed intervals, select the shot on the Capture window, and then click the **Add Options** tab. For more information, see "Using Special Shot Options" on page 28
- To capture the images, follow the instructions that apply to your digital imaging system.

## Capturing Images with an IDEXX ImageVue\* DR40, IDEXX I-Vision DR\*, or IDEXX-DR\* 1417 Digital Imaging System

**IMPORTANT:** Do not run other software programs while capturing images. Running other programs could result in loss of data.

### To capture images:

1. The first shot in the capture list is automatically selected; to take a different image, select the shot in the list.

The currently selected shot is surrounded by a light border; an arrow points to the next image to be captured.

**IMPORTANT:** For best image quality, the body part that you are imaging must match the selected shot. The shot determines image processing values and image orientation.

2. Use the technique chart provided by your installer to select suitable exposure time and kVp settings.
3. Position the animal on the table.
4. Prep the x-ray switch by pressing the foot pedal half-way down (not all the way).

You will see a message that the system is prepping.

**Note:** For best image quality, take the image within 10 seconds of the system prepped message. If more than 10 seconds elapse, release the switch and re-prep the system.

Other signs that the system is prepped include:

- The light on the small black switch box turns from green to red.
  - The green light on the white interface box is illuminated.
  - The x-ray generator tube makes the sounds that it usually makes when preparing to fire.
5. Press the switch all the way to capture the image.

**IMPORTANT:** When taking an image, **do not** perform any other operation on your computer (e.g., printing, entering data, or emailing).

You will know that the x-ray generator has fired when you see a message that the image is being captured. The generator makes its standard exposure notification.

The processed image is displayed with a dashed-line crop border:

- To accept this crop area, click the image, and then click **Crop** , or simply capture another image.
- To set a new crop area, click and drag the dotted crop line as needed, and then click **Crop** .
- To reject the crop area, click the image, and then click **Delete** .

In the capture list, the captured image is surrounded by a light border, and an arrow points to the next shot in the list.

**Tip:** To capture a different image, click the shot you want.

6. Take the next radiograph as soon as the light on the black switch box turns green and the software makes a three-note beep to signal that image processing is complete.
7. Repeat the steps above until you have taken all the images for this animal.

**Tips:**

- To add shots to the list, click **Add Shots** at the top of the capture list.
  - To pause the capture session, click **Pause** in the lower right corner of the window. For more information, see "Pausing a Study" on page 21.
8. Before completing the capture session, check and approve each image. (To view each image, click the image name in the capture list). For more information, see "Checking and Approving Images" on page 22.  
  
If necessary, you can retake, replace, or delete an image. For more information, see "Retaking, replacing, or deleting radiographs" on page 25.
  9. When finished taking all images for this session, click **Done**. The images are saved, and the Home window is redisplayed.

## Capturing Images with the IDEXX I-Vision CR\* or IDEXX-CR\* 1417 (Model 140/140R) Digital Imaging System

**IMPORTANT:** Do not run other software programs while capturing images. Running other programs could result in loss of data.

The image capture process differs slightly, depending on the driver software installed on your scanner:

- If your system was installed after June 2012, you are probably using the newer scanner software. **Follow the instructions for the newer scanner software below.**
- If you have not updated your IDEXX-PACS software since before June 1, 2012, or if you are using the Windows\* XP operating system, **follow the instructions for the default scanner software below.**

**Note:** If you are using the default scanner software but would like to upgrade, contact IDEXX Diagnostic Imaging Customer Support at 1-877-433-9948. With the upgrade, you can erase cassettes with a single click, and you no longer need to reselect the view on the blue scanner interface window as part of the capture process. To upgrade, you must be using the Windows\* 7 operating system and have updated your IDEXX-PACS software since June 1, 2012.

### To capture images with newer scanner software:

1. The first shot in the capture list is automatically selected; to take a different image, select the shot in the list.

The currently selected shot is surrounded by a light border, and an arrow points to the next image to be captured.

**IMPORTANT:** For best image quality, the body part that you are imaging must match the selected shot. The shot determines image processing values and image orientation.

2. Use the technique chart provided by your installer to select suitable exposure time and kVp settings.
3. Position the animal on the table, and take the radiograph(s).
4. Insert the cassette into the scanner.

**Note:** If the scanner is unable to identify the cassette size, a window opens so that you can specify the size.

5. Click **Capture**. A scanning message appears on the screen, and the light(s) on the front of the scanner is/are green and blinking.

**IMPORTANT:** While the plate is being read, **do not** perform any other operation on your computer (e.g., printing, entering data, or emailing).

When the scan is complete, the scanner interface closes, and the image is displayed in the main window.

The image is preserved, and an arrow points to the next shot in the list.

**Tip:** To capture a different image, select the shot you want.

6. Scan another cassette when both lights are green and steady.
7. Repeat the steps above until you have taken all the images for this patient.

**Tips:**

- To take additional shots, click **Add Shots** at the top of the capture list.
  - To pause the capture session, click **Pause** in the lower right corner of the window. For more information, see "Pausing a Study" on page 21.
8. Before completing the capture session, check and approve each image. (To view each image, click the image name in the capture list). For more information, see "Checking and Approving Images" on page 22.
  9. If necessary, you can retake, replace, or delete an image. For more information, see "Retaking, replacing, or deleting radiographs" on page 25.
  10. When finished taking all images for this session, click **Done**. The images are saved, and the Home window is redisplayed.

**To capture images with default scanner software:**

1. The first shot in the capture list is automatically selected; to take a different image, select the shot in the list.

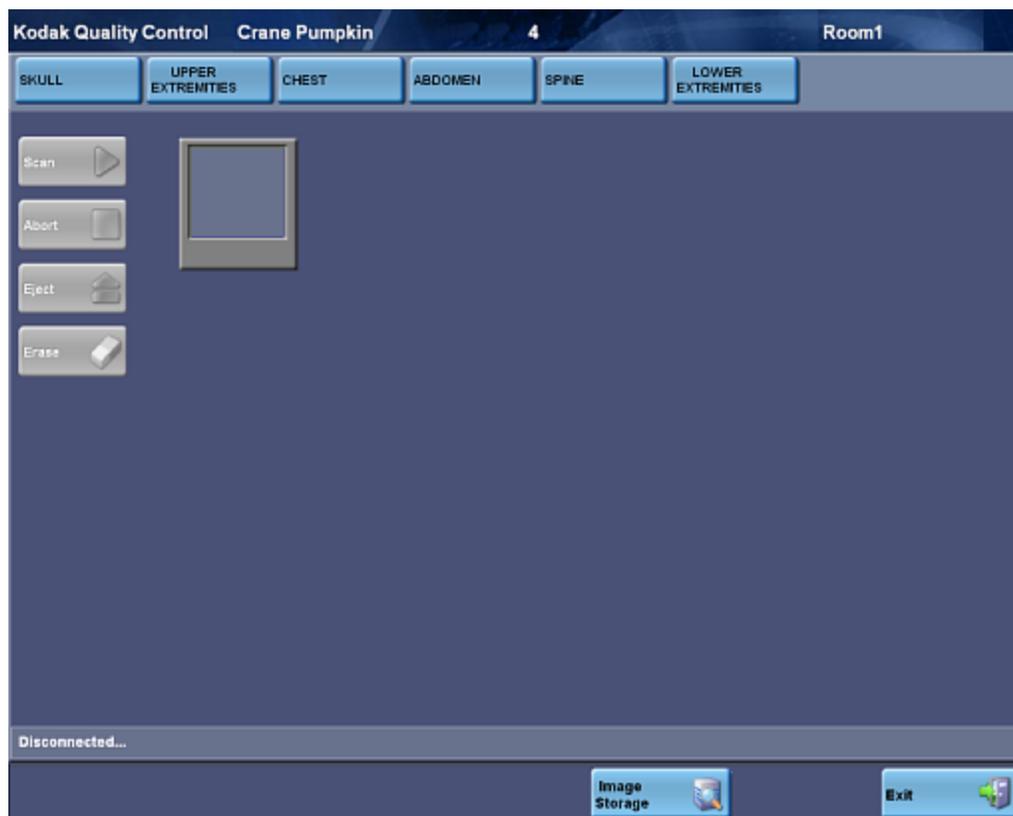
**IMPORTANT:** For best image quality, the body part that you are imaging must match the selected shot. The shot determines image processing values and image orientation.

2. Use the technique chart that was provided by your installer to select suitable exposure time and kVp settings.
3. Position the animal on the table and take the radiograph(s).
4. Click **Capture**. The Scanner Interface window opens.
5. Click the button for the body part, and then select the projection from the drop-down list.

**Note:** The body part and projection selected on the Scanner Interface window must match the shot selected on the Image Capture window. Click **Upper Extremities** for foreleg projections or **Lower Extremities** for hind leg projections.

6. Insert the cassette into the scanner.

**Note:** If you are using the IDEXX I-Vision CR\* System and the scanner is unable to identify the cassette size, a window opens so that you can specify the size.



The Scanner Interface window

7. Click **Scan**. A scanning message appears on the screen and the light(s) on the front of the scanner is/are green and blinking.

**IMPORTANT:** While the plate is being read, **do not** perform any other operation on your computer (e.g., printing, entering data, or emailing).

When the scan is complete, the scanner interface closes, and the image is displayed in the IDEXX-PACS window.

The first image is preserved, and an arrow points to the next shot in the list.

**Tip:** To capture a different image, select the shot you want.

8. Scan another cassette when both lights are green and steady.
9. Repeat these steps until you have taken all the images for this patient.

**Tip:** To pause the capture session, click **Pause** in the lower right corner of the window. For more information, see "Pausing a Study" on page 21.

10. Before completing the capture session, check and approve each image. (To view each image, click the image name in the capture list). For more information, see "Checking and Approving Images" on page 22.
11. When finished taking all images for this session, click **Done**. The images are saved, and the Home window is redisplayed.

## Pausing a Study

**Tip:** By default, a paused study closes after 4 hours, but you can change this value. To change this setting, see "Setting the Duration of Paused Studies" on page 94.

### To pause and then resume a study:

1. Click  **Pause** in the lower right corner of the Image Capture window.  
The Home window is redisplayed. The paused study is listed in the Pending list.
2. To resume a paused study, select the paused request from the **Pending** list in the Home window.  
When the study reopens, the first of the remaining shots is highlighted for capture. The remaining shots will be saved in the same study as those already captured.

## Working with the Capture Window

### To view or edit study information:

1. At the top of the capture window, click the down-arrow next to the study title to view any image request notes and to update the technician or veterinarian names if needed.
2. Click the up-arrow to close the panel.

### To select a shot to capture:

Click the shot in the capture list on the right.

The first shot is always selected by default, but you can select shots in any order. The selected shot is surrounded by a light border, and an arrow points to the next shot to be captured.

If there are any shots not captured when you reach the bottom of the list, the first of the not-captured shots is selected.

### To add special shots, such as timed series:

Click the shot name in the capture list, and then click **Add Options**. Enter the required information. Additional shots are added to the capture list as needed.

### To add shots:

Click  **Add Shots** at the top of the capture list.

**Note:** For IDEXX-DR systems, the software adds a new "miscellaneous" shot after you've captured all shots in the current list. The miscellaneous shot applies the processing settings for the last shot you took. If you want to take an image of a different body region, always click

 instead of using the miscellaneous shot. This way you can select the correct body region and shot, to ensure the proper settings for best quality.

### To delete shots:

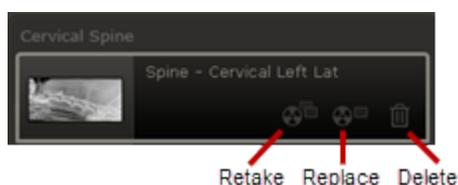
Click **Delete**  next to the shot in the capture list.

### To review captured images:

Click the thumbnail next to the shot in the capture list to display the image.

### To replace, retake, or delete a radiograph:

Icons for replacing, retaking, or deleting images appear to the right of the thumbnail after you capture an image.



- Click **Retake** to take an additional image of the same shot.
- Click **Replace** to take a new image of the same shot, replacing the previous one.
- Click **Delete** to remove the image.

## Checking and Approving Images

Before you click Done to save captured images, review them in the Image Viewer for content and quality.

Consider the following:

- Is the area of interest positioned correctly in the image?
- Is the image oriented properly?
- Is the image of diagnostic quality?

As you assess the image, you can also:

- View the image full screen.
- Edit image details, such as study name.
- Reprocess the image.

See the sections below for more information.

To learn more about the Image Viewer window, see "Using the Image Viewer Window" on page 34.

## Positioning and Cropping the Area of Interest

### To position (pan) the image:

Click the image in the Image Viewer, and then hold down the left mouse button as you drag the image to the desired location. (Touch screen: press and drag with one finger.)

### To crop the image:

1. Click the **Crop** tool , and then hold down the left mouse button as you drag the mouse to draw a border around the area to keep. (Touch screen: press and drag with one finger.)
2. To adjust the crop border, click and drag an edge of the rectangle, or to rotate the crop border, click and drag one of the corners.

For example, if the patient and the image detector/cassette were not aligned, collimation might produce an irregular white area. You can rotate the crop border until the white area is excluded, and then apply the crop.

3. When ready to crop, click **Crop**  near the corner of the cropped area. The area within the border fills the window.

**Tip:** After you capture an image, a crop border is automatically applied around the image to remove most of the unexposed plate area. You can rotate or adjust the border as needed before applying the crop.

### Changing Image Orientation

Orientation rules (also called hanging rules) are applied automatically to orient the image correctly for each shot, but you can rotate or flip an image as needed.

**Note:** After an image is rotated, a marker shows the number of degrees clockwise the image has been rotated; an "X!" marker indicates an image has been flipped horizontally; and a "Y!" marker indicate an image has been flipped vertically. These markers are always displayed with the image and cannot be hidden.

### To rotate or flip an image:

Click the **Rotate and Flip** tool , and then select the option you want:



Rotate 90° clockwise



Rotate 90° counterclockwise



Flip top to bottom



Flip left to right

### Assessing Image Quality

Use the tools below to examine an image before you end the capture session.

For information about other image enhancement tools, see "Using Image Viewer Tools" on page 36.



Zoom

Displays the zoom tools. You can adjust magnification any of these ways:

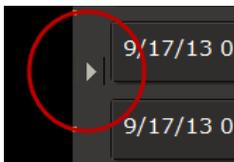
—Click the **Fit to Window** button to see the entire image within the window.

	<ul style="list-style-type: none"> <li>—Click a predefined percentage.</li> <li>—Click the plus or minus buttons to adjust size by 10% up or down.</li> </ul>
 Invert	Reverses light and dark values.
 Window/Level	Displays contrast/brightness controls: <ul style="list-style-type: none"> <li>—Drag the upper scale left or right to change the level (brightness).</li> <li>— Drag the lower scale left or right to change window (contrast).</li> </ul> Numerical values are displayed on the right side of the scales.
 Reprocess:	Returns the radiograph to its original appearance, and then applies new edge enhancement. Previous changes or enhancements are removed. For more information, see "Reprocessing Images" on page 25.

## Viewing the Image Full Screen

### To view an image full screen:

Click the small arrow on the right edge of the image to expand the image to the full width of the screen. To restore the default view, click the arrow again.



## Editing Image Details

Image details include series title, modality, and technique settings.

**Note:** The image details feature should be used only in a manner consistent with local laws governing the maintenance of veterinary records used for diagnostic purposes.

### To view and edit image details:

1. With the image open in the Image Viewer, click the study name above the image and hold down the mouse button as you pull down the study panel. (Touch screen: press the name and pull down.)
2. Edit the following, as needed:
  - Series title and comments
 

**Note:** The **study** title cannot be edited; it can be changed only on the shot selection screen before image capture.
  - Image title
  - Capture date, source, technician name, veterinarian name, and modality
 

**Note:** The ability to change the capture date is provided so you can enter the correct date for scanned documents.

3. Edit the following technique details, as needed:
  - Distance—The distance from the x-ray source to the detector or screen; select the unit of measure from the drop-down list.
  - Thickness—The thickness of the body part in centimeters.
  - Sedation—Select from the drop-down list.
  - Exposure mAs—The amount of x-ray exposure in milliamperere-seconds (mAs). This is calculated automatically if you enter values in the **Exposure mA** (current in milliamperes) and **Exposure Time** (duration in seconds) text boxes.
  - Exposure kVp—The amount of voltage (peak kilovoltage) used for this image.
  - Use of Grid—Select this check box if a grid was used.
4. When finished, pull the bottom of the panel back up to close it.

### Retaking, replacing, or deleting radiographs

You can retake, replace, or delete radiographs during the capture session.

#### To retake a radiograph (take an additional shot of the same exam type):

1. In the capture list, select the thumbnail of the image you want to retake.
2. Click the **Retake**  icon to the right of the thumbnail.
3. Capture the new image. A thumbnail for the additional image is added to the series.

#### To replace a radiograph (substitute a new shot for an existing one):

1. In the capture list, click the thumbnail of the image you want to replace.
2. Click the **Replace**  icon to the right of the thumbnail.
3. Capture the image. A thumbnail for the new image replaces the original thumbnail.

#### To delete a radiograph:

1. In the capture list, click the thumbnail of the image you want to delete.
2. Click the **Delete**  icon to the right of the thumbnail. The image is removed from the series.

**Note:** After you click **Done** to finish the capture session, only an administrator can delete images.

## Reprocessing Images

Reprocessing returns the image to its original state and then applies new edge enhancement values. Most of the time, you will not need to reprocess images.

**IMPORTANT:** Reprocessing removes any changes to the image, such as rotation, window/level adjustments, and annotations.

You might want to reprocess an image if:

- It was captured using an exam type that did not match the body part.

For instance, if an image was taken for a skull, but the animal's abdomen was x-rayed, the IDEXX-PACS software applied the level and strength values appropriate for skull images. These values would not be the best for the abdomen.

- The animal has a metal implant, and edges next to the implant appear dark or hazy.

Try reprocessing with a level value of 3 and a strength value of 40. If the edge enhancement still needs fine-tuning, try reprocessing again and lowering one or both values.

See the following sections for instructions.

### Reprocessing with Standard Image Processing

Standard image processing is used for radiographs captured with any IDEXX-DR system. When you reprocess, you change the level and strength values that are applied to the image.

#### To reprocess an image with standard image processing:

1. With the image open in the Image Viewer, click **Reprocess** .
2. Type new values for **Level** (level refers to the size of the structure that is to be enhanced):
  - Lower numbers (1–2) sharpen the edges on fine details such as bone texture.
  - Higher numbers (4–5) sharpen the edges of organs, bones, and other larger structures.
3. Type a new value for **Strength** (strength tells the system how much to sharpen):
  - A high number (greater than 50) sharpens strongly, but will show more noise in other parts of the image.
4. Click **Apply**. The image is restored to its original appearance, but with the new edge enhancement settings applied.

### Reprocessing with ClearCapture Dx\* Image Processing Software

ClearCapture Dx\* Image Processing Technology offers advanced image processing to users of IDEXX-DR\* 1417 and IDEXX-CR\* 1417 systems.

ClearCapture Dx technology requires a **dongle** connected to your computer. The dongle resembles a USB flash drive. It contains security software that lets the IDEXX Digital Imaging system access the special software required for the ClearCapture Dx technology. The dongle should always be attached to a USB port on the computer connected to the IDEXX Digital Imaging system.

Removing the dongle is not recommended. Without the dongle:

- An IDEXX-CR 1417 system using ClearCapture Dx technology will capture radiographs in an unprocessed state; you cannot reprocess them.
- An IDEXX-DR 1417 system using ClearCapture Dx technology will capture radiographs using standard image processing; you can reprocess them, but only with standard image processing.

When the IDEXX-PACS software detects that the dongle is missing, it displays an error message with further instructions.

**To reprocess an image captured with ClearCapture Dx Image Processing Software:**

1. Click **Reprocess**.
2. From the **Body Part** drop-down list, select large-scale processing parameters for a particular body part. Most of the time, you will not want to change this setting.
3. Use the **Preset** drop-down menu to select one of the finer-level processing presets (soft, medium, enhanced, or strong) for the selected body part. The preset adjusts the amount of edge detail in the radiograph.
4. Click **Apply**. The image is displayed with the new edge enhancement applied.

# Using Advanced Image Capture Tools

IDEXX Diagnostic Imaging software offers advanced tools that let you:

- Use either a visual shot tree or a text list to select shots.
- Create your own lists of favorite shots.
- Add, delete, and retake shots.
- Use special shot options, such as a timed series of shots.
- Get real-time technique assistance to help you capture the best possible radiographs.
- Add markers to images to indicate image position or handle location (for portable plates).
- Use a DICOM® modality worklist to fulfill image requests started at your practice management system.

## Using Special Shot Options

Special shots are available for certain body regions. For example, if you select an abdomen shot in the Add Shots window, you can choose a timed series of shots for an excretory urogram.

### For a list of all available special shots:

In the IDEXX-PACS Home window, go to **Settings**  **Exam Trees** > **Shot Options**.

### To select special shot options:

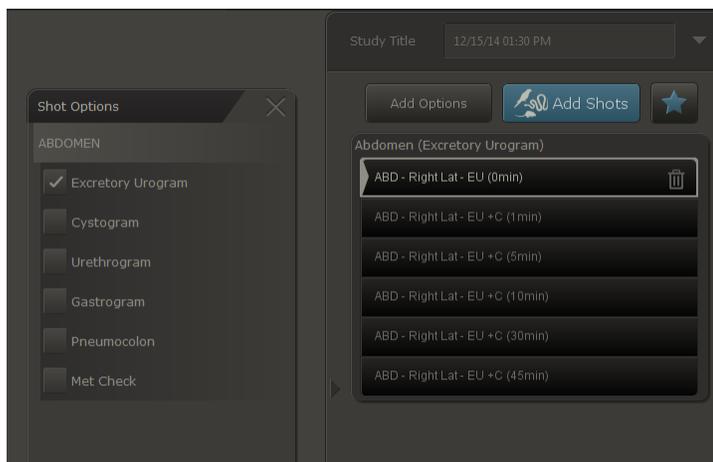
1. Start the image capture request.
2. In the Add Shots window, select the shot for the appropriate body part.
3. In the capture list, click the shot you want to add the options to.
4. Click the **Add Options** tab above the capture list.

A list of options appropriate for that shot is displayed.

5. Select an option.

The special shots are added to the capture list.

6. Click **OK** to close the options list and then capture the shots.



**Tips:**

- An on-screen keypad is displayed if you click a box that requires numeric values, such as a time period. Use the  key to move to the next value, the  key to back space, and the  key to close the keypad.
- When capturing a timed series, remember to pause the capture session and return to it when it's time to capture the next set of images. A timed series must be completed within 24 hours. For more information, see "Pausing a Study" on page 21.
- All images within a timed series are stored within the same image study.

**Creating and Using a Favorite Shots List**

A favorite shots list is a custom list of shots. The software includes default favorite shots lists ready to use.

Favorite shot lists are displayed as tabs on the Add Shots window.

**To create a favorite shots list:**

1. Start the image capture process for any patient (you won't need to capture the images).
2. In the Add Shots window, select the shots you want to include in the favorite shots list, and then click **Done**.
3. Above the capture list, click **Favorites** .
4. Enter a name for the favorite shots list and click **Save**.
5. Click **Done** to close the Capture window without capturing images. A tab for the new favorite shots list will be added to the Add Shots window.

**To use a favorite shots list:**

1. In the Add Shots window, select the tab for the list you want to use. The shots are added to the capture list.
2. Add any additional shots or shot options as you normally would.
3. Capture the radiographs.

**To update a favorite shots list:**

1. Start the image capture process for any patient (you won't need to capture the images).
2. In the Add Shots window, select the favorite shots list you want to update.

3. Add or delete shots as needed.
4. When finished, from the **Tools**  menu, select **Create New Favorite**.
5. Click **Yes** to overwrite the existing favorite shots list.

**Tip:** To save this list as a new list, click **No**, and then enter a new list name and click **Save**.

## Using Image Coach\* and Other Technique Assistance

Image Coach\* features available on the Image Capture window include:

- The real-time positioning aid—a photo showing an animal correctly positioned for the shot
- Reference radiograph—an example radiograph showing the animal correctly positioned for the shot
- Exposure index—a scale indicating the level of x-ray exposure

In addition, the IDEXX-PACS\* technique prompt displays recommended kVp, mAs, and exposure length.

### Using the Real-Time Positioning Aid

Before you take a radiograph, you can review a photograph of a correctly positioned animal, along with hints for achieving the position.

#### To display the positioning aid:

On the right side of the Image Capture window, click **Position** to display the photograph. Next to the photo is a text description, along with recommended beam center, measurement point, and other variables, as well as hints for obtaining the best quality radiograph.

### Using Reference Radiographs

Before you take a radiograph, you can review a reference radiograph that shows how the radiograph should look when the patient is positioned properly for this view.

#### To display a reference radiograph before you capture:

On the right side of the Image Capture window, click **Reference**. An example radiograph is displayed for the selected view.

**IMPORTANT:** This radiograph is provided to assist in taking the radiograph correctly. It is not an example of any particular pathology.

### Using the Exposure Index

After you capture a radiograph, a scale on the Image Capture window displays the level of x-ray exposure. This index shows whether the right amount of x-rays reached the detector or screen.

#### Remember:

- Trust the image. If the radiograph is of diagnostic quality, don't worry about an exposure index that is a little high or low. The Normal area on the index is not an absolute goal.

- Use the exposure index to troubleshoot **nondiagnostic** radiographs. For example, if you have an all-white or all-black image, a high- or low-exposure index is valuable information to share with IDEXX Diagnostic Imaging Customer Support.
- The exposure index is relative—it is calculated differently for each shot.

**For nondiagnostic radiographs with low exposure index (underexposed):**

Low exposure can cause graininess, a mottled appearance, or large amounts of visual noise.

Try the following:

1. Check that you measured the thickness of the anatomy correctly.
2. Check that you used the proper technique for this anatomy thickness and view and that you selected the correct shot.
3. Increase your mAs by one generator setting.
4. Retake the same radiograph.
5. If the new radiograph is not diagnostic, call IDEXX Diagnostic Imaging Customer Support at 1-877-433-9948.

**For nondiagnostic radiographs with high exposure index (overexposed):**

Overexposed images generally appear too dark. Because digital images can be adjusted to many different appearances, an overexposed image may look light in some areas and dark in others.

Try the following:

1. Check that you measured the thickness of the anatomy correctly.
2. Check that you used the proper technique for this anatomy thickness and view.
3. Decrease the kVp by 5–10, or decrease the mAs by two generator settings.
4. Retake the same radiograph.
5. If the new radiograph is not diagnostic, call IDEXX Diagnostic Imaging Customer Support at 1-877-433-9948.

**If a particular exam type is always nondiagnostic and index is always high or low:**

Contact IDEXX Diagnostic Imaging Customer Support about adjusting your technique chart for that view.

**If radiographs are always nondiagnostic and index is always high or low:**

Ask your generator service technician about getting the generator calibrated. After generator recalibration, contact IDEXX Diagnostic Imaging Customer Support to have a new technique chart created.

**Using the Technique Prompt**

If you have enabled the technique prompt feature, you can view the recommended technique settings (kVp, mAs, and seconds) for each shot before you capture the image.

To enable the feature, see "Setting Up the Technique Prompt" on page 91.

### To view the suggested technique:

On the right side of the Image Capture window, select the weight of the patient or the thickness of the body part to be radiographed. The kVp, mAs, and seconds values for that view appear in large numbers above the weight/thickness selection area.

#### Note:

- For a DR system, your technique chart is set up by weight. Contact IDEXX Diagnostic Imaging Customer Support at 1-877-433-9948 if you want to use thickness instead.
- For a CR system, the chart is set up by thickness. The technique prompt is not available for IDEXX-CR 1417 systems that do not have ClearCapture Dx\* software installed

## Applying Image Markers

### Adding a Position Marker

You can add a marker to a radiograph to indicate whether the image is left, right, lateral, or medial.

The marker becomes a permanent part of the image and will be flipped and rotated whenever you flip or rotate the image.

### To add a position marker:

1. After you capture an image, click  in the toolbar below the image.
2. Select a marker type:
  - **L** for either lateral or left
  - **M** for medial
  - **R** for right

**Note:** The D and G marker types support markers in other languages.

3. An "X" appears in all four corners of the image; click the **X** in the corner where you want the marker to appear.

**Note:** You can change the marker by repeating these steps. But once you leave the Image Capture window, the marker is fixed. You cannot move the marker to a different location or remove it from the image.

### Setting Up the Plate Handle Locator

If you are using an IDEXX-DR\* 1417 or EquiView\* Digital Imaging System, you can add a plate handle locator to your images to indicate plate orientation.

### To add the plate handle locator:

1. In the Home window, click .
2. On the left side of the System Settings window, click **Global Settings**.

3. Select the **Show Plate Handle Locator** check box.
4. Click **Save** to save and close the window, or click **Apply** to save without closing.

# Viewing and Enhancing Images after Capture

The Image Viewer is the work space where you can view, enhance, and annotate images, as described in the sections below, and where you can share images in various ways.

See these chapters for more information:

- "Managing Images" on page 52
- "Importing and Distributing Images" on page 61
- "Managing Client and Patient Records" on page 73

## Using the Image Viewer Window

When you capture a new image or open a previously captured image, the image is displayed in the Image Viewer. In this window you can:

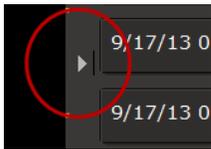
- View the image [full screen](#).
- View and edit [image information](#).
- View [patient information](#).
- Select and view images from the [patient's radiographic history](#).
- [Annotate and enhance](#) images.



Image Viewer

**To view an image full screen:**

Click the arrow on the right edge of the image. Click again to redisplay the patient history.

**To view and edit image information:**

Click the study name above the image, and then pull the cursor down. (Touch screen: touch and pull down.) You can edit these image details. For more information, see "Editing Image Details" on page 52.

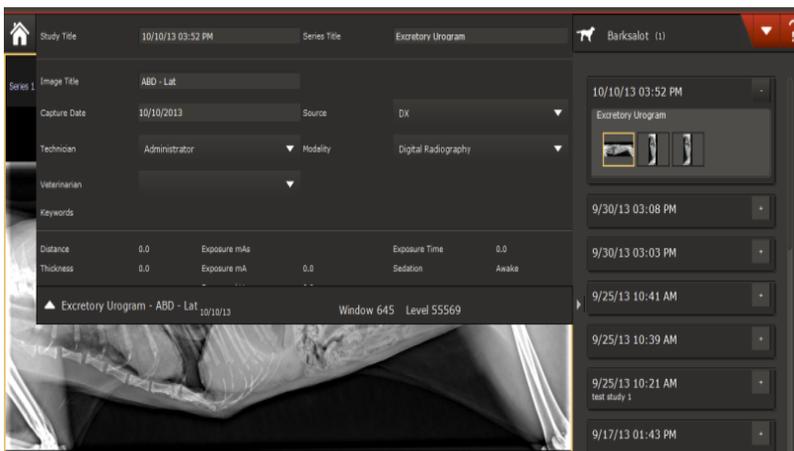


Image Viewer with study panel pulled down

**To view patient information:**

Click the patient name above the patient history area on the right, and then pull the cursor down. (Touch screen: touch and pull down.)

You cannot edit the information here. (To edit the information, click , and then select **Patient/Client Management**. For more information, see "Updating a Patient or Client Record" on page 74

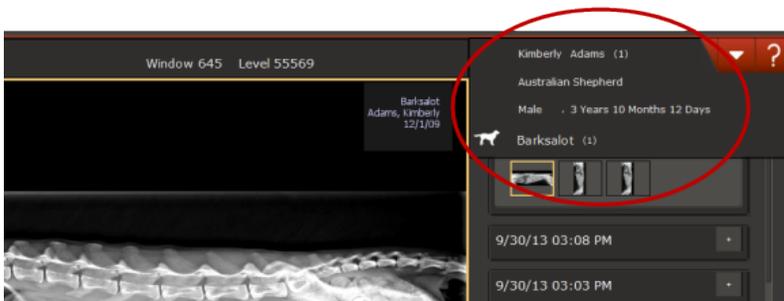


Image Viewer with patient panel pulled down

**To select and view images from the patient history:**

1. On the right side of the Image Viewer, find the study date you want, and then click the down-arrow to open the study.
2. Click a thumbnail to view the image.

**Tip:** You can also compare images for this patient. For more information, see "Comparing Images" on page 48

**To use viewing and enhancement tools:**

1. Click a tool in the toolbar located below the image.
2. For information about each tool, see "Using Image Viewer Tools" on page 36.

**Saving Modified Images****To save modified images in the database:**

Click **Home** , and then click **Yes** when prompted to save the image.

**Tip:** Do **not** use the Save button to save images in the database. Use the Save button only when you want to save images outside of the database, such as in a personal folder, on a CD, or on another computer.

**Using Image Viewer Tools**

The toolbar at the bottom of the Image Viewer lets you view, enhance, and annotate your images.



**IMPORTANT:** Each image can have only **one** enhanced version. If you make changes to the enhanced version, the previous image is overwritten. However, the original image is never overwritten. You can always use the Restore Original tool to return to the version you saved at the end of the capture process.

**To use an Image Viewer tool:**

1. Click the tool icon; if a palette of tools opens, select the one you want. Refer to the individual tool descriptions below to learn more.
2. When finished, click the tool again to close it.

## Annotation Tools

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Click the **Annotation** tool to display a palette of line, shape, and text tools. Use the tools as described below. Click the **Annotation** tool again to close it.



Click the **Pointer** tool, and then click and drag to draw an arrow.



Click the **Line** tool, and then click and drag to draw a line.



Click the **Rectangle** tool, and then click and drag to draw a rectangle.



Click the **Freehand** tool, and then click and drag to draw a freehand line.



Click the **Ellipse** tool, and then click and drag to draw an ellipse.



Click the **Text** tool, and then click the image to display a box where you can enter text. To move the annotation, click and drag the text to a new location.

---

### To change or delete an annotation:

1. Click the **Annotation** tool, and then click the annotation on the image. Editing options are displayed.
2. Update the annotation, or click  to delete it.
3. Click the **Annotation** tool again to close it.

### To hide or show annotations:

Click the **Toggle** tool  on the main Image Viewer toolbar.

## Measurement Tools

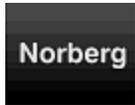
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Click the **Measurement** tool to display a palette of tools for calibrating images and for measuring lines, structures, and angles, as described below.



For instructions on calibrating images, see "Calibrating Images" on page 44.



For instructions on using the Norberg angle tool for measuring hip dysplasia, see "Calculating the Norberg Angle" on page 44.



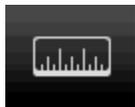
For instructions on using the TPLO (Tibial Plateau Leveling Osteotomy) tool for surgical planning, see "Calculating the TPLO Angle" on page 45.



For instructions on using the VHS (Vertebral Heart Score) tool for measuring cardiac enlargement, see "Calculating the Vertebral Heart Score" on page 46.



Click the **Protractor** tool, and then click the image and drag to draw a line to the corner of the angle. Release the mouse button, and then click again to place the endpoint of the second line. The angle measurement between the two lines is displayed.



Click the **Ruler** tool, and then click and drag to draw a measurement line on the image.

**Note:** The Ruler tool is accurate only if the system or the image has been calibrated. Otherwise, a window opens so you can begin the calibration process. For more information, see "Calibrating Images" on page 44.



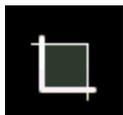
Click the **Image Rulers** tool to display or hide an image ruler along the top and left side of the Image Viewer. A marker on each ruler shows the current position of the mouse pointer or imaging tool within the image.

**Note:** The Image Ruler is accurate only if the system or the image has been calibrated. Otherwise, a window opens so you can begin the calibration process. For more information, see "Calibrating Images" on page 44.

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## Crop Tool

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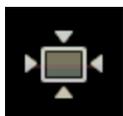
Click the **Crop** tool and then click and drag a crop border on the image so that it contains the part of the image you want to keep. Right-click inside the border and select **Apply Crop**. (Touch screen: touch and hold with one finger and then tap with another finger to display the menu.)

**Tip:** To adjust the border, click and drag an edge of the rectangle. To rotate the crop area, click and drag one of the corners. For example, if the patient and the image detector/cassette were not aligned and collimation produced an irregular white area, you could rotate the crop area to exclude the white area from the image.

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## Actual Size Tool

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Click the **Actual Size** tool to display the image at approximately life size. Because different monitors can vary slightly, the correlation may not be exact. **Note:** You must calibrate the software before using the Actual Size tool. For more information, see "Calibrating Images" on page 44.

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## Magnify Tools

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Click the **Magnify** tool to open a palette of tools for changing image size, as described below.



Click the **Fit to Window** tool to enlarge the image to fill the Image Viewer.



Click the **Minus** tool to reduce image size by 10%.



Click a value to display the image at the specified percentage.



Click the **Plus** tool to increase image size by 10%



Click the **Magnifier** tool, and then click the image to magnify the specific area. As you move the tool, the magnified area moves. When the tool stops, a scale appears at the bottom of the magnified area. Move the slider on the scale to increase or decrease magnification.

To change the window and level (contrast and brightness) within the magnified area, select the **Lock Window** check box and then click and drag the mouse pointer within the magnified area. When finished, clear the check box to continue using the Magnify tool, or click the **Magnifier** tool again to deactivate the magnifier.

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## Contrast and Brightness (Window/Level) Tool

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Click the **Contrast and Brightness** tool to display slider bars you can use to adjust these values.



Drag the **Level** slider bar to adjust image brightness.



Drag the **Window** slider bar to adjust image contrast.

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For more information about image contrast and brightness and when to adjust these values, see "When to Adjust Contrast and Brightness (Window/Level)" on page 43.

## Invert Tool

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Click the **Invert** tool to invert the colors in your image. White becomes black, and black becomes white.

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## Rotate and Flip Tools

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Click the **Rotate and Flip** tool to display a palette of tools to change image orientation.

Markers are automatically added to the image to indicate that orientation has changed. The markers are displayed with the image and cannot be hidden. If the image includes annotations, the annotations rotate or flip, as well.



Click once to rotate the image 90° clockwise. A marker shows the number of degrees or rotation.



Click once to rotate the image 90° counterclockwise. A marker shows the number of degrees or rotation.



Click once to flip the image top to bottom. An "X!" marker is added to the flipped image.



Click once to flip the image left to right. A "Y!" marker is added to the flipped image.

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## Restore Original Tool

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Click the **Restore Original** tool to return the image to the way it looked when you opened the Image Viewer. All modifications to the image will be lost.

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## Reprocess Tool

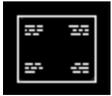
For more information about reprocessing, see "Reprocessing Images" on page 25.



Click the **Reprocess** tool to return the image to its original state and then apply new edge enhancement values. Reprocessing removes any changes you made to the image, such as contrast and brightness adjustments and annotations.

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## Toggle Overlays and Annotations Tool



Click the **Toggle Overlays and Annotations** tool to show or hide the overlays and annotations on the image.

## Left-Right Marker Tool



Click the **Left-Right Marker** tool to place a left-right marker on the image. For more information, see "Adding a Position Marker " on page 32.

## Editing and Applying Image Overlays

An overlay displays information about the image, such as patient name, date of birth, and image and series name, in the corners of the image. You can choose which information to include in the overlays.

**Tip:** You can also choose to include the overlay information whenever you export an image. For more information, see "Setting Up Imaging Units, Compression, and Export Options" on page 90.

### To view or hide the image overlay:

With an image open in the Image Viewer, click .

### To select overlay content:

1. With an image open in the Image Viewer, go to  > **Edit Overlay**.
2. In the overlay window, select the check boxes for the information you want to include.
3. For each selected item:
  - In the **Grouping** column, select the corner where the information should be displayed.
  - If multiple information items are in the same corner, use the **Order** and **Line Number** columns to specify the order of the information and the lines on which it is displayed.
4. Click **OK**.

### Image Overlays and DICOM

If you create a DICOM file of an image, the DICOM header holds much of the same information that is displayed in the overlays. For this reason, the ability to apply overlays is not available whenever you:

- Email an image as a DICOM file
- Send an image via DICOM

- Save an image in the DICOM (DCM) format using the Save As feature
- Send a case using DICOM
- Create a Patient CD†

By default, the IDEXX-PACS software sends the original version of the radiograph, as it looked when you clicked Done at the end of the capture process (or when you imported or received the file). Changes made to the image later are not part of the DICOM image. To send the current version of the DICOM image rather than the original version, contact IDEXX Diagnostic Imaging Customer Support at 1-877-433-9948.

†Although a DICOM image cannot have annotations or overlays, the JPEG version of the same image can have them if you choose. When you display a DICOM image using the viewer that is included on a Patient CD, information from the DICOM header is displayed the same way the overlays are displayed within the IDEXX-PACS software.

### When to Adjust Contrast and Brightness (Window/Level)

The Window/Level tool opens two scales you can use to adjust image contrast and brightness.



During initial processing, the software uses parameters defined by exam type to create a default look. You may need to adjust the look because of differences in collimation and variations in exposure and size.

- **Window** indicates how much **contrast** is in the image.  
A small window (500–2,000) creates high contrast, but some bone or lung detail may be "washed out." A very large window (around 5,000 or 10,000), causes the image to be flat and very evenly gray. The most frequent use of window is to adjust the contrast **down** to provide a high-contrast image.
- **Level** sets the center point where the image changes from white to black, similar to the **brightness** adjustment on a TV. Changing the level makes the overall image lighter or darker and allows you to see detail in different areas. For most images, the level will average around 8,000.

The most frequent use of level is to adjust brightness to view different areas, for example, to view the lungs and the abdomen in the same image.

#### To use the Window/Level tool:

Click the Window/Level tool, and then:

- Drag the upper scale  left or right to change the level (brightness).
- Drag the lower scale  left or right to change window (contrast).

Numerical values are displayed on the right side of the scales.

**To adjust window/level without using the tool:**

Make sure imaging shortcuts are enabled, and then:

- Click and drag the cursor left or right to decrease or increase the window.
- Click and drag the cursor up or down to decrease or increase the level.

**Special Measurement and Planning Tools****Calibrating Images**

The Calibration tool lets you view an image at actual size and measure structures within the image.

**IMPORTANT:** To calibrate, you must know the exact size of a feature within an image to use as a standard of measurement.

The Calibration tool is most useful in small animal radiography, where the distance between the x-ray source and the x-ray detector is usually fixed.

**Before you begin:**

In the specify the units of measure you want to use (English or metric). For more information, see "Setting Display Formats" on page 84.

**To calibrate images:**

1. Open an image that has a feature for which you know the exact measurement.
2. Click the **Measurement** tool , and then click the **Calibrate** tool .
3. Click and drag to draw a line on the image that corresponds to the feature for which you know the exact measurement.

The Calibration Settings window opens.

4. In the **Length** box, type the number of units (inches, centimeters, etc.) that matches the length of the feature in the image.
5. Click **OK**.

The window closes, and the image is displayed in actual size, based on your setting. The Calibrated value in the image overlay reads "Calibrated: true."

You can now use the Ruler tool  to measure other structures on this image or on other images of the same modality.

**Note:** This calibration setting is applied to all radiographs captured with this modality. If the source-to-plate distance changes, you must recalibrate by repeating the steps above.

**Calculating the Norberg Angle**

The Norberg angle tool is used to assess hip dysplasia and hip laxity. Follow the instructions below to place the Norberg angle template on the image, and then adjust the template to determine the Norberg angle.

### To calculate the Norberg angle:

1. Click the **Measurement** tool , and then click the **Norberg** tool.
2. Place the mouse pointer in the center of one femoral head and click.
3. Place the mouse pointer in the center of the second femoral head and click.

The Norberg angle template is displayed, with the default Norberg angles for each hip ( $0^\circ$ ) shown near the femoral head circles and the default combined Norberg angle value shown in the center.

4. Adjust the Norberg angle template by doing the following:
  - To move the entire template, click the solid lines anywhere outside of the circles and drag.
  - To change the angle of one of the femoral-head-to-rim-of-acetabulum lines, click and drag the small square handle. This handle is on the line near the circle.
  - To move a circle, click the center point and drag.
  - To adjust the size of a circle around the center point, click the small round handle and drag.
  - To adjust the size of a circle relative to a fixed edge point, click the small round handle and drag it to the point on the circle that you want to be fixed in place. Then click elsewhere on the circle to create a second handle, and drag this handle.

**Note:** If you add a third handle, the circle is redrawn so that it passes through all three handle points. The circle is adjusted as you click and drag any of the handles.

  - To adjust a circle for the best fit to an irregular area, such as a deformed femoral head, click to add points along the edge of the femoral head. The software redraws the circle to be the closest possible fit to the points and moves the center point appropriately. You can have up to 10 points around the circle.

### Calculating the TPLO Angle

The TPLO tool lets you place the tibial plateau leveling osteotomy (TPLO) template on an image, and then adjust the template to determine the TPLO angle.

The TPLO template is a set of three lines which intersect at a common point:

- Line 1 is vertical when the template is first displayed. This is the line that should be aligned with the length of the bone so that it passes through the center of the talus and through the centers of the intercondylar eminences of the tibia.
- Line 2 is always perpendicular to line 1. When you move or rotate line 1, line 2 moves and rotates with it.
- Line 3 is the line that you move to calculate the TPLO angle, which is measured between lines 2 and 3. As you rotate line 3, the TPLO angle measurement changes.

**To determine the TPLO angle:**

1. Click the **Measurement** tool , and then click the **TPLO** tool.
2. Click on the image at a point as close as possible to where you want the center point of the template to be.  
This limits the number of line adjustments you need to make to move the template into place.
3. Adjust line 1 (the vertical line): Click on the blue or green handle and drag to rotate the line around the center point, or click anywhere on the line and drag to move the line.  
Line 1 must align with the length of the bone and pass through the center of the talus and through the centers of the intercondylar eminences of the tibia.
4. Move line 3 to calculate the TPLO angle: Click on the red or green handle and drag to rotate the line around the center point, or click anywhere on the line and drag to move the line.

**Calculating the Vertebral Heart Score**

The vertebral heart score (VHS) tool is used to determine whether the heart is enlarged. The VHS is determined by measuring the length and width of the heart and then comparing these measurements to a section of the thoracic vertebrae. Essentially, you measure how many vertebrae long the heart is and how many vertebrae wide. The sum of the two measurements is the VHS.

The IDEXX-PACS\* software calculates the VHS using three measurements on a thoracic lateral radiograph:

- The length of the heart from the cranioventral border of the carina to the cardiac apex.
- The width of the heart at the widest point on the cardiac image, measured using a line perpendicular to the length line.
- The average length of five thoracic vertebrae, starting from the cranial edge of the T4 vertebra and moving in a caudal direction. (You can change the number of vertebrae used to calculate this average, as described below.)

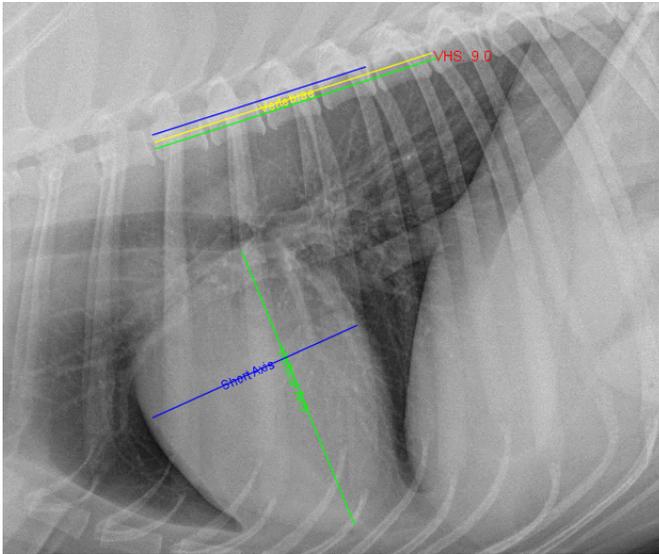
When you've made these measurements, the VHS tool determines the length and width of the heart in average vertebral units (to one decimal place). The sum of the length and width is the VHS.

**To use the VHS tool to calculate vertebral heart score:**

1. Open a thoracic lateral radiograph in the Image Viewer.
2. Click the **Zoom** tool , and then zoom in so that you can see the heart and the T4–T12 thoracic vertebrae clearly. This will also make it easier to work with the lines.
3. Click the **Measurement** tool , and then click the **VHS** tool. Two sets of lines and an annotation window appear on the image:
  - The pair of crossed lines is used to measure the heart. One line is labeled Short Axis and the other is labeled Vertical Axis.

- The set of three parallel lines is used to measure the vertebrae. The lengths of the top and bottom vertebral lines match the lengths of the heart lines and will change as the heart lines are adjusted. The middle vertebral line is used to calculate the average vertebra length. By default, the average vertebra length is based on five vertebrae (T4–T9); to change the number of vertebrae used to calculate the average, see “To change VHS tool settings,” below.

When you first open the tool, the VHS value is shown as N/A. A numerical value is calculated and displayed as you adjust the measurement lines.



VHS tool applied to an image

4. Measure the long axis of the cardiac silhouette as follows:
  - a. Click one end of the Vertical Axis line and move it to the carina of the mainstem bronchus.
  - b. Click the other end of the Vertical Axis line and move it to the cardiac apex.
5. Measure the short axis of the cardiac silhouette, perpendicular to the vertical axis, as follows:
  - Click one end of the Short Axis line and move it to one side of the widest axis of the heart.
  - Click the other end of the Short Axis line and move it to the other side of the widest axis, keep the line perpendicular to the Vertical Axis.
6. Adjust the vertebral measurement line (middle line of the three parallel lines), as follows:
  - a. Click one end of the middle line and move it to the cranial edge of the T4 vertebra.
  - b. Click the other end of the middle line and move it to the cranial edge of the T9 vertebra (or to a different vertebra, if you have changed the tool settings). The VHS tool uses the length of this line to calculate the average vertebral length.
7. Note the resulting VHS value displayed on screen and in the VHS annotation box.

**Tips:** To delete the VHS lines from the image, click **Delete**  in the VHS Annotation Settings window, and then click the **Measurement** tool to close it.

**To change VHS tool settings:**

With the radiograph open in the Image Viewer, open the VHS tool again, and click on any of the VHS lines on the image. The VHS Annotation Settings window opens. Change settings as follows:

- To change the number of vertebrae used to calculate the average vertebra length, type a new number in the **No. of Vertebrae** text box, and then drag the middle measurement line to the appropriate vertebra.
- To override the calculated VHS value, type a new value in the VHS Annotation Settings window, and then click the image to close the window and apply the new value.
- To recalculate the value, delete the current value. Click the image to close the window. The VHS value is recalculated using the current line settings.
- To change the color, width, or style of any of the lines, select the appropriate tab in the VHS Annotation Settings window, choose the desired values, and then click the image to close the window and apply the new values.

**Using Surgical Templates**

Surgical templates are not included in the IDEXX-PACS software, but if you have separate surgical template software installed, the Surgical Template tool is available in the Image Viewer. This tool allows you to launch the independent software so that you can add templates to a copy of an IDEXX-PACS software image for presurgical evaluation. You can drag and place templates of orthopedic implants onto an image and make surgical measurements.

**To use surgical template software on an IDEXX-PACS software image:**

1. Open the image in the Image Viewer and then click the **Surgical Templates** tool .
 

The surgical template software opens in a new window. The image you were viewing opens in the surgical template window.
2. Use the surgical template software to apply templates to the image for presurgical planning. Refer to the surgical template software user instructions for more detail.
3. After you have applied the templates, bring the template-modified images back into the IDEXX-PACS software. For more information, see "Bringing a Template-Modified Image Back into the IDEXX-PACS Software" on page 65.

**Comparing Images****Tips:**

- If your IDEXX-PACS software is integrated with your Cornerstone software, always use the IDEXX-PACS software when comparing images for diagnostic purposes, even if the files are non-DICOM images, such as JPGs.
- You can compare images of different formats (e.g., DICOM with JPG).
- All images being compared must belong to the same patient.

**To compare multiple images for the same patient:**

1. In the Image Viewer, select the thumbnail of the first image you want to compare.
2. Click the **Layout** tool  in the lower right corner of the window.
3. Select the thumbnails of the other images you want to compare. The other images open in the viewer, alongside the first image so you can compare them.
4. When finished, select the thumbnail for the image you want to keep open, and then click the **Compare** button again to deselect it.

**Viewing Dental Radiographs**

When you view dental radiographs, specialized dental viewing modes are available on the Image Viewer window. These modes allow you to arrange images in a variety of dental layouts and to move back and forth among them.

There are three modes:

- Template layout mode
- Review all images mode (all the images from the template layout are displayed in a grid)
- Review selected images mode (selected images are viewed in isolation, at a larger size)

**Note:** Dental image viewing modes are available only if you have selected Intra-oral Radiography (IO) as the image modality. For more information, see "Labeling a Radiograph as Intra-Oral" on page 49.

**Labeling a Radiograph as Intra-Oral**

To view dental radiographs in a dental template, you must first label the radiographs as intra-oral.

**To label a radiograph as intra-oral:**

1. With a dental radiograph open in the Image Viewer, click the study name above the currently displayed dental image and pull down to reveal the study panel.
2. In the **Modality** box (in about the middle of the panel), click the down-arrow and select **Intra-oral Radiography**.
3. Drag the bottom of the panel up to close the panel.
4. Repeat for each radiograph in the study.
5. Click **Home** .
6. When prompted to save each image, click **Yes**.

The next time you open the study, the radiographs appear in the dental template. You can select a different dental template if needed.

**Using Dental Template Mode**

In dental template mode, the primary radiographs in the dental series are displayed in the template pane and are arranged in a template layout so you can view them together. The rest of the images are in the overflow pane at the bottom of the window.

The radiographs are placed in cells that are shown as black rectangles. You can move a radiograph from one cell to another, either within the same pane or between panes. If you move a radiograph to an occupied cell, the radiograph currently in the cell moves to the last overflow cell in the overflow pane.

**Note:** Only images identified as Intra-Oral Radiography are displayed in dental templates. For more information, see "Labeling a Radiograph as Intra-Oral" on page 49.

#### To display radiographs in a different template layout:

1. Click **Templates**  in the Image Viewer toolbar. A menu displays layout choices.
2. If using a mouse, move the mouse pointer over the choices in the list to see representations of the layouts.
3. Select one of the template layouts. The radiographs are displayed in that layout.

#### To place a radiograph in a different cell:

1. Click the image and drag it to the cell.
2. Release the mouse button when the cell turns white. The radiograph now occupies that cell.

**Note:** The radiograph that had occupied the cell is moved to the last overflow cell.

#### To remove a radiograph from the template layout:

Click the radiograph, drag it to the overflow pane, and release the mouse button.

**Note:** If you release the mouse button when the radiograph is between cells in the overflow pane (no cell turns white), the radiograph you are moving is placed in the last overflow cell.

#### To save the current arrangement of radiographs for this series:

No action is necessary. The next time you open the series in the Image Viewer, the radiographs will be in the same cells they were in when you closed the series.

#### Review Selected Images Mode and Review All Images Mode

Dental image viewing modes are available only if you have selected Intra-oral Radiography (IO) as the image modality. For more information, see "Labeling a Radiograph as Intra-Oral" on page 49.

#### To view one or more radiographs in Review Selected Images mode:

1. Click a dental image or hold down the CTRL key and click more than one image.
2. Click **Review** , and then select **Review Selected**. The image or images are displayed in a larger size.

**Tip:** You can also double-click a single image to view it in a larger size.

3. To redisplay the image(s) in the dental template, click **Back to Series** in the upper right corner of the viewing pane.

### To view radiographs in Review All Images mode:

1. Click **Review** , and then select **Review All**. All images that appeared in the template now appear in a grid format.
2. To redisplay the image(s) in the dental template, click **Back to Series** in the upper right corner of the viewing pane.

## Viewing Multimedia Files

You can view multiframe DICOM files and multimedia files, such as ultrasound images, CT scans, AVI (.avi) files, and MPEG (.mpg, .mpeg) files in the IDEXX-PACS Image Viewer.

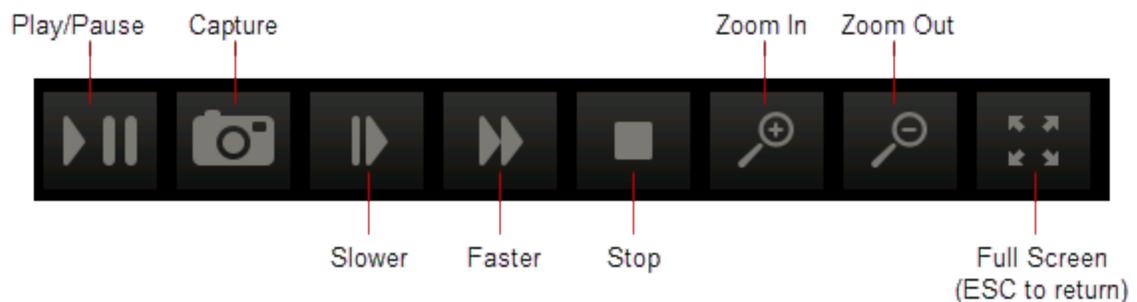
### To view multimedia files and capture images from them:

1. Import the file to a patient record. For more information, see "Importing Non-DICOM® Images" on page 63

The file opens in the Image Viewer with the multimedia toolbar displayed along the bottom.

A thumbnail image is added to the current study. An arrow icon on the thumbnail indicates this is a video file.

2. Use these tools to view the file:



3. Click the slide bar to quickly move to a specific spot in the video.



### To use full-screen mode:

1. When the multimedia player is in full screen mode, press the **SPACEBAR** to pause or play the video.
2. Press **ESC** to return to the Image Viewer in normal mode.

### To capture images from the video:

To capture a single frame of the video file, click the **Capture** button in the video toolbar.

Each captured frame is saved as a still image, with a thumbnail in the current study. You can annotate the still images as needed.

# Managing Images

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## Reassigning an Image

Follow the steps below to reassign an image to a different patient or to a patient after a STAT image capture.

**IMPORTANT:** If your IDEXX-PACS software is integrated with your Cornerstone software, always reassign diagnostic images in IDEXX-PACS software, rather than in Cornerstone. The updated images information from IDEXX-PACS will be sent to Cornerstone and the Cornerstone record will be updated accordingly.

### To reassign an image:

1. Find the patient study, and then click the thumbnail to open the study in the Image Viewer.

**Tip:** To assign images from a STAT request, look for a patient card labeled +STATPATIENT or click  Capture, select the **Pending** list, and then select the **STATPATIENT** request.

2. In the Image Viewer, select the thumbnail of the image you want to reassign.
3. Click **Import/Export** , and then click **Reassign** .
4. In the Reassign Images window, search for and select the patient you want to assign the image to, and then click **Reassign**.

If your IDEXX-PACS software is integrated with Cornerstone software, the reassigned image is removed from the Cornerstone Patient Clipboard\*.

## Editing Image Details

Image details include series title, modality, and technique settings.

**Note:** The image details feature should be used only in a manner consistent with local laws governing the maintenance of veterinary records used for diagnostic purposes.

### To view and edit image details:

1. With the image open in the Image Viewer, click the study name above the image and hold down the mouse button as you pull down the study panel. (Touch screen: press the name and pull down.)
2. Edit the following, as needed:
  - Series title and comments

**Note:** The **study** title cannot be edited; it can be changed only on the shot selection screen before image capture.
  - Image title
  - Capture date, source, technician name, veterinarian name, and modality

**Note:** The ability to change the capture date is provided so you can enter the correct date for scanned documents.

3. Edit the following technique details, as needed:
  - Distance—The distance from the x-ray source to the detector or screen; select the unit of measure from the drop-down list.
  - Thickness—The thickness of the body part in centimeters.
  - Sedation—Select from the drop-down list.
  - Exposure mAs—The amount of x-ray exposure in milliamperere-seconds (mAs). This is calculated automatically if you enter values in the **Exposure mA** (current in milliamperes) and **Exposure Time** (duration in seconds) text boxes.
  - Exposure kVp—The amount of voltage (peak kilovoltage) used for this image.
  - Use of Grid—Select this check box if a grid was used.
4. When finished, pull the bottom of the panel back up to close it.

### Saving an Image in a Different Format

After you click Done at the end of a capture session, all captured images are saved to the database.

However, you can also save images to your local computer or network in various file formats, so that the images can be imported into other software programs or sent over the Internet.

Available formats:

- Bitmap
- JPEG
- JPEG 2000
- RAW
- TIFF
- DICOM
- Video (.avi, .mpg, .mpeg)

#### To save images in a different file format:

1. In the Home window, find the patient record for the study date; then in the patient card click , and then click .

OR

If the image is already open in the Image Viewer, click  in the lower right area of the window.

The Sharing window opens. Thumbnails from the current study are at the top left.

2. Use the Sharing window to select the images you want to save. For more information, see "Using the Sharing Window" on page 61.
3. When you have selected all the images, click .
4. Choose a location and enter a file name.
5. Select the format from the **Files of Type** drop-down list.
6. To include any annotations you applied in the Image Viewer, select **Burn Annotations**.

7. To include the overlay information displayed in the Image Viewer, select **Burn Overlays**.
8. Click **Save**.
9. Click **Close** to close the Sharing window.

## Cloning an Image

When you clone an image, you make a copy of the current version of the image, including any annotations or enhancements.

### To clone an image:

1. With the image open in the Image Viewer, click . A copy of the image appears beside the original image. "(Copy)" is appended to the image name.
2. Modify or adjust the cloned image as needed.
3. To save the cloned image, click the **X** in the upper right corner, and then click **Yes** when prompted to save.

## Deleting an Image

### IMPORTANT:

- Only a system administrator can delete images. For more information, see "Creating a System Administrator Account" on page 82.
- Only individual images can be deleted; you cannot delete series or studies. A series or study is automatically deleted when all the images within it have been deleted.

### To delete images:

1. Log on as the system administrator.
2. In the Home window, find the patient record containing the image to be deleted.
3. Click the thumbnail in the patient card to open the image in the Image Viewer.
4. In the lower right corner of the window, click .
 

You are prompted to confirm the deletion.
5. Click **Yes** to delete the image, or **No** to keep the image.

## Using the Radiology Log

Radiology log information is automatically recorded for each radiograph taken on your IDEXX Diagnostic Imaging System.

You can record technique details during the capture process or when you are reviewing the images later.

You can view the entire log, print it, email it, or export it as a PDF (Portable Document Format) file.

## Viewing and Editing the Radiology Log

The radiology log captures information about each image. The information comes from the image's study panel. For more information, see "Recording Technique Information in the Radiology Log" on page 55.

You can also add information to the log directly, as described below.

### To view and edit the radiology log:

1. In the Home window, click , and then select **Radiology Log...**
  2. Enter any combination of search criteria:
    - Date range (use the **Calendar** button )
    - Client or patient name or ID
    - Technician name
    - Modality
  3. Click **Search**.
  4. Scroll down to see all the results, and scroll to the right to see all the information for each image.
  5. To sort the log, click the column header you want to sort by.
  6. To add an entry to the log, click **Add Entry**, and then enter information in the new row at the top of the table.
  7. To edit information, click in the cell, and then enter or select a new value. You cannot edit patient and client information.
  8. To delete an entry you added, click in the row to select it, and then click **Delete Entry**.
- Note:** You cannot delete entries created automatically by the IDEXX-PACS\* software.
9. To print or share the log with others:
    - Click **Print Log**, and then click  in the Preview window.
    - Click **Email Log**, enter an address and a subject, and then click **Send**.
    - Click **Export as PDF**, enter or select a location to save the PDF, and then click **Save**.
  10. When finished, click **Save** and then **Close**.

## Recording Technique Information in the Radiology Log

You can enter technique details for an individual image in the image's study panel. The information is then stored in the radiology log.

### To record information in the radiology log:

1. With the image open in the Image Viewer window, pull down the study panel. For more information, see "Editing Image Details" on page 52.
2. Enter or edit the following information to save it in the radiology log:
  - Distance—Distance between generator and body part.
  - Thickness—The thickness of the body part being imaged.

- Sedation—Select from the drop-down menu.
- Exposure mAs—The amount of x-ray exposure in milliamperere-seconds (mAs). This is calculated automatically if you enter values in the Exposure mA and Exposure time boxes.
- Exposure mA—The amount of current in milliamperes (mA).
- Exposure Time—The duration of the exposure in seconds as a decimal value, or use the drop-down menu to select a fraction of a second.
- Exposure kVp—The amount of voltage (peak kilovoltage) used for this image.
- Use of Grid—Select the check box if a grid was used.

## Backing Up and Archiving Images

Be sure to back up your data frequently. IDEXX-PACS\* Imaging Software offers several backup options.

In addition, you may want to archive older images to save space on your computer. Archiving moves images from the local computer to another location for long-term storage.

For more information about backing up and archiving, see the sections below.

### Backing Up Your Data

IDEXX-PACS\* software offers three backup options:

- **Full**—The IDEXX-PACS software stores the **last 3 days** of images and data. Data backups are stored in the cloud (in the event of a system failure, contact IDEXX Diagnostic Imaging Customer support to download data files to your server if needed).

**Note:** Backup folders are saved for **3 days only**. After 3 days, the next backup will overwrite the oldest of the 3 folders. In addition, multiple backups in a single day overwrite any other backups made the same day. To keep images and data for a longer period, transfer them to a CD/DVD, an external drive, or other media.

- **External**—A third-party program of your choice manages the backup process. If this process copies the local IDEXX-PACS backup folders, remind your backup vendor that these folders contain only the last 3 days of images and data. To keep images and data for longer periods, work with your backup vendor to establish an appropriate backup schedule and process.
- **Data Only**—A third-party program backs up the IDEXX-PACS images, while the IDEXX-PACS software backs up the data files.

You can change your auto-backup option, if needed. For more information, see "Setting Up Auto-Backup Options" on page 93. In addition, you can always back up your system manually, as described below.

Follow the procedures below to perform the backup.

### To back up while using the IDEXX-PACS software:

1. Do one of the following:

- In the Home window, click , and then select **Backup System**.

OR

- Close the IDEXX-PACS software, and click **Yes** when asked if you want to back up your system.

The backup window opens.

2. Leave the default backup folder location (C:\Program Files\IDEXX\IDEXX-PACS\backup), or click **Browse** and select a different location.

**Note:** IDEXX strongly recommends that you back up your system to a **network** location.

3. Click **OK**.
4. If asked whether you want to overwrite existing files, click **Yes to All**.

**IMPORTANT:** If you use the Full or Data Only backup option, you must manage the backup folder for space.

### To manually back up your data:

1. Close the IDEXX-PACS software.
2. Insert a writeable CD or DVD into your disc drive.
3. Double-click the **Computer** (or **My Computer**) icon on your desktop, and then double-click the **Local Disk (C:)** icon in the My Computer window.
4. Double-click the **Program Files** folder, and then the **IDEXX** folder, and then the **IDEXX-PACS** folder, and then the **Backup** folder.
5. Hold down the CTRL key while you click to select all of the following: the **Images** folder and each of the three folders labeled with dates.
6. While the items are still selected, right-click any of the items and select **Copy**.
7. Double-click the **Computer** (or **My Computer**) icon again.
8. Find the drive location for your storage media (CD/DVD or other device), right-click the drive name, and select **Paste** to copy the files.
9. When the files have been copied, open the drive, and verify that all of the files are there:
  - Check dates of the backed-up files to ensure that they match the files in the C:\Program Files\IDEXX\IDEXX-PACS folder.
  - Check the total number of images in the backed-up Images folder to ensure that it matches the original Images folder. The total is displayed on the left side of the window's status bar.

### To check backup status:

Backup status is visible in the **Connections** drop-down list in the Home window:

- **Green:** Backup < 3 days ago
- **Yellow:** Backup > 3 days ago
- **Red:** Backup > 2 weeks ago

## Archiving Images

Unlike a backup, which saves a **copy** of your images and data, archiving **removes** image files from your computer and saves them to a CD or DVD, or to a network location, such as a server. Archiving can save space on your computer and make image management easier.

You can view archived images in the Image Viewer window. For more information, see "Accessing Archived Images" on page 58.

**IMPORTANT:** Store archived images in a safe location! If archived files are lost or damaged, the images cannot be recovered.

**Tip:** You can set up the IDEXX-PACS software to alert you when it's time to archive images. For more information, see "Setting Up Archive Alerts" on page 94.

### To archive images:

1. In the Home window, click , and then select **Archive Images**.
2. Enter any or all of the following search criteria:
  - Patient and client names or IDs
  - A date range in which the images were captured
  - **Include Inactive, Include Deceased, or Show only inactive/deceased** option(s)
3. Click **Search**. Each row in the results table represents a separate study.
4. By default, all of the studies are selected for archive; to select specific studies:
  - Hold down the CTRL key and click to deselect or select individual studies.
  - Click **Deselect All** or **Select All**.
5. In the **Archive To** area:
  - Select **CD/DVD**, and then enter the number of copies you want to make.  
OR
  - Select **File Folder**, and then enter the folder location, or click **Browse** and then find and select the location. Locations can include a folder on your computer, on another computer in your network, or on an external hard drive.
6. In the **Archive Label** box, enter a name for the archive file.
7. If using a CD/DVD, insert the disc; if using an external hard drive, connect the drive to your computer.

**Note:** Be sure to label discs with the date. IDEXX recommends using the same format as the IDEXX-PACS software: "IDEXX-PACS YYYY-MM-DD (#)" where # is the CD number.

8. When ready, click **Archive** at the top of the window.

**Note:** Archived images are identified by an "Archived" banner across the patient card in the Home window.

## Accessing Archived Images

When an image is archived, it is removed from the database and stored in your archive location (e.g., archive hard drive, CD, network server, etc.). A thumbnail of the image remains in the patient record as a reference.

### To view archived images:

1. In the Home window, search for the archived image, just as you would any image in the IDEXX-PACS software.

An "Archived" banner is displayed over the thumbnails on the patient card.



2. To view the image, click the image thumbnail:
  - If the image is readily accessible (e.g., on a networked computer or server), it opens in the Image Viewer.
  - If the image is stored in a remote location (such as a CD), a message indicates the location. Insert the disc or browse to the location on the external hard drive or network, and click **OK**. The image opens in the Image Viewer window.
3. To reactivate this image, click  on the Image Viewer window to save the images in the database. You can now use this image like any other image in the IDEXX-PACS software.

## Using IDEXX Web PACS or the IDEXX ImageBank\* Storage System

IDEXX Web PACS and the IDEXX ImageBank\* storage system store your digital images securely and affordably in the cloud. You can view your digital radiographs wherever you have Internet access, making it easy to work from home or in the field, and making it simple to restore files whenever necessary.

You should continue to back up your client and patient data and software system files using your standard backup procedure.

### Activating IDEXX Web PACS

Access to the IDEXX Web PACS software requires an IDEXX VetConnect\* PLUS account, as well as an IDEXX Web PACS subscription.

To learn more about subscribing to IDEXX Web PACS, contact your IDEXX representative.

### How New Images Are Uploaded

When you subscribe to IDEXX Web PACS, your images are uploaded to the cloud shortly after you capture them or import them into your IDEXX PACS system.

The images are placed in a queue and then uploaded as your local bandwidth allows. Copies of the images are also kept on your local system until storage limits are reached.

Uploaded images include all DICOM images that you capture, import, retrieve, or place in your watch directory. You can upload other file types besides DICOM, as well. For more information, see "Setting Up IDEXX Web PACS Storage Options" on page 92.

**To view the status of the image upload:**

1. In the Home window, click **Connections**.
2. On the ImageBank row, click **Queue**.

The queue displays a list of image uploads and their progress.

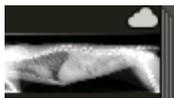
**Uploading Legacy (Older) Images**

To upload images captured before you subscribed to IDEXX Web PACS software (known as legacy images), you will need an upload kit from IDEXX that contains a flash drive. Contact IDEXX Diagnostic Imaging Customer Support for pricing and upload options.

Follow the instructions in the kit to copy the legacy images to the drive and to send the drive to IDEXX Web PACS at Amazon Web Services\*.

**Viewing Images Stored in the Cloud****To view cloud-based images in the IDEXX-PACS\* software:**

1. In the IDEXX-PACS Home window, search for the patient record and the study you want.
2. Look for a small cloud icon in the upper right corner of the thumbnail on the patient card.
3. Click the thumbnail to view the images in the Image Viewer, just as you would any image stored locally on your computer.

**To view images directly in IDEXX Web PACS:**

1. In a web browser, go to [vetconnectplus.com](http://vetconnectplus.com).

OR

In the IDEXX-PACS Home window, click  and then click the VetConnect PLUS icon



2. Log on to VetConnect PLUS, and then click **Imaging** in the VetConnect PLUS title bar.

**Tip:** If you are already logged on to VetConnect PLUS, the IDEXX Web PACS software will open automatically.

# Importing and Distributing Images

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## Using the Sharing Window

Use the Sharing window to send images by DICOM or email, and to submit cases to IDEXX Telemedicine Consultants.

**Tip:** You can send both images and ECG files from IDEXX-PACS software.

### To open the sharing window:

In a patient card, click , and then click **Share** .

OR

In the Image Viewer, click **Import/Export** , and then click **Share** .

### To use the sharing window:

1. At the top of the sharing window, on the left, click the arrows to find and select the study date.

All studies and series for the selected date are listed below.

2. Click the **Add Study** or **Add Series** link to move the images to the right pane.

OR

Click individual images to move them to the right pane.

3. Repeat **step 2** to select additional images, if needed.

**Tip:** To remove images from the right pane, click **Remove Study** or **Remove Series**, or click the individual image.

4. When all the images you want to share are in the right pane, click the button for the sharing method, for example, **Telemedicine**  or **Print** .

5. Provide any additional information required by the sharing method.

## Printing Images

You can print an image, a series, or a study.

### To print an image:

1. In the Home window, find the patient record, and in the patient card click , and then click **Print** .

OR

With the image open in the Image Viewer, click **Print** .

The Sharing window opens.

2. Use the Sharing window to select the images you want to print. For more information, see "Using the Sharing Window" on page 61.
3. When you have selected all the images, click . The images open in a Print Preview window.
4. (Optional) Use the tools at the top of the window to review the images before printing.
5. When ready, click , specify which images to print (all or a range), and then click **OK**.
6. Click  to close the Print Preview window, and then click **Close** to close the Sharing window.

## Emailing Images

You can email an image, a series, or a study from either the Home window or the Image Viewer. You can send the image in several formats:

- JPEG and TIFF formats can be viewed by most Internet browsers and many graphics programs.
- DICOM format can be viewed only by specialized medical or veterinary imaging software like the IDEXX-PACS software.

If you choose to send a DICOM file, the software sends the original version of the radiograph, as it looked when you clicked Done at the end of the capture process (or when you imported or received the file). The image does not include any changes you made on the Image Viewer, such as annotations and window/level adjustments. If you want to send the current version of the DICOM image rather than the original version, contact IDEXX Diagnostic Imaging Customer Support. For service within the United States or Canada, call 1-877-433-9948.

### Before you begin:

Your system's email default settings must be set up before you can email images. For more information, see "Setting Up Email" on page 84.

### To email images from the Home window or the Image Viewer:

1. In the Home window, find the patient record, and in the patient card click , and then click **Export** .

OR

With the image open in the Image Viewer, click **Import/Export**  and then **Export** .

The sharing window opens.

2. Use the Sharing window to select the images you want to email. For more information, see "Using the Sharing Window" on page 61.
3. When you have selected all the images, click .

An email message box opens.

4. Enter the email address, a subject line, and a message.
5. Select a file format for the images.

The JPEG, JPEG 2000, and TIFF formats can be viewed in most Internet browsers and many graphics programs; the DICOM format can be viewed only by using specialized medical or veterinary imaging software.

6. Click **Send**.
7. Click **Close** to close the Sharing window.

### **Sending Images Automatically after Image Capture (Auto-Routing/Auto-Exporting)**

Auto-routing sends images via DICOM<sup>®</sup> to a specified destination, such as a consultant, after image capture. You can specify fully automatic routing or semi-automatic routing.

Auto-exporting sends copies of the images to a file folder on your computer or network.

#### **Before you begin:**

Enable the auto-routing and/or auto-exporting feature. For more information, see "Setting Up Auto-Routing and Auto-Exporting" on page 92.

#### **To send images via fully automatic auto-routing or auto-exporting:**

No intervention is needed. The captured images are sent to the predefined destination automatically. Use the DICOM queue to check progress, or to pause, restart, or cancel image sending. For more information, "Using the Outbound DICOM Queue" on page 70.

#### **To send images via semi-automatic auto-routing:**

1. Click **Done** at the end of the image capture session. The Send DICOM window opens.
2. In the **Images to Send** box, select the images by holding down the CTRL key and clicking image names.
3. In the **Remote Servers** box, select the destination. (To send the images to more than one destination, hold down the CTRL key while clicking the destinations.)
4. Click **Send**.
5. Use the DICOM queue to check progress, or to pause, restart, or cancel image sending. For more information, see "Using the Outbound DICOM Queue" on page 70.

### **Importing Non-DICOM<sup>®</sup> Images**

You can import the following types of non-DICOM<sup>®</sup> files:

- .bmp—Microsoft\* Windows\* bitmap
- .jpg or .jp2—Joint Photographic Experts Group (JPEG) file interchange format or JPEG 2000
- .tif—Tagged image file format (TIFF)
- .avi—Audio video interleaved format
- .mpg, .mpeg—Moving Picture Experts Group format
- .ecg—Electrocardiogram files

You can also import DICOM images. For more information, see "Importing Local DICOM Files Manually" on page 68.

**Before you begin:**

- You must import files into an existing patient record. If this is a new patient, create a patient record first. For more information, see "To add a new patient without capturing radiographs" in "Adding a New Patient and Client Record" on page 73. Then follow the steps below.
- The files to be imported must be stored on your network or local computer.

**To import an image from the Image Viewer:**

1. Find the patient record you want to add the images to, and open it in the Image Viewer.
2. In the lower right corner of the Image Viewer, click **Import/Export** , and then click **Import** .
3. Use the **Look In** drop-down list, or the browsing area below it, to locate the image.

**Tip:** Use these buttons to navigate to the image location:



Move up one folder



Return to the Home folder (Desktop)



View file names only



View file details (name, size, type, and date)

4. To look for specific file types, click the down arrow in the **Files of Type** box, and select the image format.
5. Click the file name to select it, and then click **Import**. To select multiple images, hold down the CTRL key while you select the files. (Touch screen: you must import files individually.)

The image opens in the Image Viewer, and a thumbnail is added to the currently open series. If there is no current series, a new study and series are created to contain the imported file(s).

6. Pull down the study panel at the top of the Image Viewer, and then edit the following as needed:
  - a. Series title
  - b. Capture date
7. Pull the panel back up to close it.
8. Click **Home** .
9. When prompted to save the image(s), click **Yes**.

## Importing Images by Scanning

### Before you begin:

- You must define the scanner source in imaging settings. For more information, see "Setting Up Imaging Units, Compression, and Export Options" on page 90.
- Scanned images must be added to a current patient record; therefore, create a new client and patient record first, if needed. For more information, see "Adding a New Patient and Client Record" on page 73.

### To scan images:

1. Find the patient record you want to add the images to, and open it in the Image Viewer.
2. If your device scans multiple pages at one time, place the pages into the scanner, and then in the IDEXX-PACS Image Viewer, click  and select **Multi TWAIN**. The images are acquired and displayed.

OR

If your device scans one image at a time (such as a flatbed scanner), place the image in the scanner, and then in the IDEXX-PACS Image Viewer, click  and select **Single TWAIN**. The image is acquired and displayed. Repeat for each image you want to scan for this patient.

3. For each image, pull down the study panel at the top of the Image Viewer, and then edit the following as needed:
  - a. Series title
  - b. Capture date
4. Pull the panel back up to close it.
5. Click **Home** .
6. When prompted to save the image(s), click **Yes**.

## Bringing a Template-Modified Image Back into the IDEXX-PACS Software

There are two ways to bring an image back into the IDEXX-PACS software after you have applied surgical templates to it. The method you use depends on whether DICOM services are enabled on your system.

### If IDEXX DICOM Services are enabled on your system:

1. While using the template software, export the image as a DICOM file by using the Commit feature in the template software. (See your surgical template software documentation for instructions.)
2. On the IDEXX-PACS Home window, open the study that contains the original image. The new template-modified image is included in the same series as the original image.

**If IDEXX DICOM Services are not enabled on your system:**

1. While using the template software, save the image as a JPEG file. (See your surgical template software documentation for instructions.)
2. In the IDEXX-PACS software, open the patient study that contains the original image, and then import the JPEG file. For more information, see "Importing Non-DICOM® Images" on page 63.

The image appears in the Image Viewer window and is added to the same series as the original image.

**Note:** When a template-modified image is brought into the IDEXX-PACS software, the template becomes part of the image. If you want to save an image with a template and then make additional modifications, you must reopen the file using the surgical template software.

**Using DICOM to Send and Receive Images**

The DICOM® (digital imaging and communications in medicine) standard allows for the transfer, storage, and printing of digital images between various software programs or equipment, regardless of the manufacturer.

The DICOM queue manages the sending and receiving of DICOM files. The DICOM Queue window provides two tabs:

- Outbound—Lists all DICOM files being sent out of your IDEXX-PACS system
- Inbound—Lists all DICOM files being received by your IDEXX-PACS system from external sources

**Sending Images to Remote DICOM Servers**

**IMPORTANT:** Before you can send your images to other DICOM-enabled servers, you must configure DICOM settings for the sending and receiving computers. For more information, "Overview of DICOM® Services Configuration" on page 76.

When you send a radiograph via DICOM, the original version of the radiograph is sent (the version as it looked when you clicked Done Capture or when you imported or received the file). Changes such as annotations and window/level adjustments are not included. To send a version containing these updates, contact IDEXX Diagnostic Imaging Customer Support 1-877-433-9948.

**To send images from the Home window:**

1. In the Home window, find the patient record, click expand , and then click **Share** .

OR

In the Image Viewer, click **Import/Export** , and then click **Share** .

The Sharing window opens. Use the Sharing window to select the images you want to send. For more information, see "Using the Sharing Window" on page 61.

2. When you have selected all the images, click the **DICOM** button.

The Send DICOM window opens. The Images to Send list shows the images you have selected.

3. In the **Remote Servers** box, select the image destination. (To send the images to more than one destination, hold down the CTRL key while clicking on the destinations.)
4. Click **Send**.
5. Click **Close** to close the Sharing window.

Use the DICOM queue to check the progress of the images, or to pause, restart, or cancel image sending. For more information, see "Using the Outbound DICOM Queue" on page 70.

### Importing Images from Remote DICOM Servers Using Query and Retrieve

DICOM Query and Retrieve lets you search for and import image studies from remote servers, so you can view the images in the IDEXX-PACS software.

#### Before you begin:

The remote servers must be defined in the IDEXX-PACS software. For more information, see "Configuring Remote DICOM Servers or Modality Worklist Connections" on page 78.

#### To import an image from a remote server:

1. In the Home window, click , and then select **Query Retrieve**.
2. Type search criteria in the search text boxes, and select the remote server from the drop-down list in the Location box.

**Tip:** Servers appear in the list only if they have been defined in the IDEXX-PACS software.

3. Click **Search**.
4. In the search results, select the study (or studies) you want to import and click **Retrieve**. A message notifies you that the study has been requested.
5. Click **OK**. The software begins importing the file(s).
6. To check the status of the import request, in the Home window, click **Connections**.
7. On the DICOM row of the Connections menu, click **Queue** to open the DICOM queue window.
8. Select the **Inbound** tab, find the request in the table, and note the status in the **Status** column. For more information, see "Using the Inbound DICOM Queue" on page 69.

When the status says "Complete," the study has been imported.

9. When the import process is complete, search for and open the images as you would any other images.

### Importing Local DICOM Files Automatically

If you frequently import multiple DICOM images, you can import them automatically by placing them into a DICOM watch directory. The default location of the watch directory is C:\Program Files\IDEXX\IDEXX-PACS\dicomdrop.

The software checks the watch directory at specified intervals and automatically imports any images it finds.

**Note:** IDEXX recommends that you test the DICOM watch directory with a single image to ensure that all settings are properly configured.

You can also import DICOM images manually. For more information, see "Importing Local DICOM Files Manually" on page 68.

### To use the DICOM watch directory:

1. Use the DICOM configuration window to specify the location of the watch directory (if you don't want the default location) and to specify the interval at which the software checks the directory. For information, see steps 12 and 13 in "Configuring the Local DICOM\* Server" on page 76.
2. When you have DICOM images to import, copy them to the DICOM watch directory.

The images will be imported based on the specified schedule. If you are importing a large number of images, the process may take a couple of minutes.

### Importing Local DICOM Files Manually

When you import a DICOM image, the IDEXX-PACS software searches for a patient record that matches the patient information in the DICOM file and then adds the DICOM file to that record. If no patient record matches, IDEXX-PACS creates a new patient record for the file.

In addition to DICOM radiographs, you can import DICOM ECG files. The ECG file will be

identified by a heart icon  in the patient card and the Image Viewer. You cannot view the ECG tracing itself, but you can add an ECG file to a telemedicine case.

You can import DICOM images manually, as described below, or you can add them to a watch directory for automatic import at specified intervals. For more information, see "Importing Local DICOM Files Automatically" on page 67

### Before you begin:

- The DICOM file must be located on your local computer or local network.

### To import a DICOM image:

1. In the Home window, click , and then select **Import DICOM**.
2. Use the **Look In** drop-down list or the browsing window to locate the image.

**Tip:** Use these buttons to navigate to the image location:



Move up one folder



Return to the Home folder (Desktop)



View file names only



View file details (name, size, type, and date modified)

**Note:** If you do not see the files displayed in the browsing window, select **All Files** in the **Files of Type** drop-down list. This allows you to see DICOM files that have been saved without the standard .dcm or .dic file extensions.

- Click the file name to select it, and then click **Import**.

**Tip:** To select multiple files, hold down the CTRL key while you click the file names. (Touch screen: you must import files individually.)

- View the status of the import in the DICOM queue window; you may need to click **Refresh** to see the most current status.
- When the import is complete, the image is added to the patient record;

### Viewing the Status of the DICOM Connection

#### To view the status of the DICOM connection:

- In the Home window, click .
- On the DICOM Queue row, note the color of the circle. It tells you the status of the DICOM connection:
  - Green—IDEXX DICOM services are running, and the queue does not contain any sent or received images with a status of Failed.
  - Yellow—Check the queue for information about sent or received images that have failed. You may see this status when DICOM has either started or stopped.
  - Gray—DICOM services have not been configured. For more information, see "Overview of DICOM® Services Configuration" on page 76.
  - Red—The DICOM server is not running. If you are using the computer that is your IDEXX Diagnostic Imaging server, click **Start** on the DICOM row.
- To open the DICOM queue, click **Queue** on the DICOM row.

#### To start or stop the DICOM queue

- In the Home window, click .
- On the DICOM Queue row, click **Start** or **Stop**.

### Using the Inbound DICOM Queue

The inbound DICOM queue lists images that have been received by the system or are in the process of being received.

#### To use the inbound DICOM queue:

- In the Home window, click  (button color may be different).
- On the DICOM row, click **Queue**.
- Select the **Inbound** tab.
- Click **Refresh** to see the most recent information.

Possible Status values for inbound DICOM files are:

- Requested—Images have been requested but not yet received.
- Complete—Images were received successfully and can be viewed in the IDEXX-PACS software.

- Receiving—Images are being received. You cannot remove images that have this status.
- Pending—Requested images are waiting to be sent.
- Failed—Images were not received successfully.

**To remove a received or a failed image from the queue:**

Select the image row, and then click **Remove** on the right side of the window.

**To remove all information from the inbound queue:**

Click **Clear History**.

**To close the DICOM Queue window:**

Click the **X** in the upper right corner.

**Using the Outbound DICOM Queue**

The outbound DICOM queue lists images that being sent to another location.

**To view the outbound DICOM queue:**

1. In the Home window, click  (button color may be different).
2. On the DICOM row, click **Queue**.
3. Select the **Outbound** tab.
4. From the **Destination** drop-down list, select the destination you want to review.
5. Click **Refresh** to see the most recent information. The following information is displayed:
  - Destination to which the image is being sent
  - Patient name
  - Owner name
  - Image name
  - Study date
  - Number of retries
  - Status of the transmission
  - Status details
6. Possible Status values are:
  - Pending—Images are waiting to be sent.
  - Sending—Images are in the process of being sent.
  - On Hold—Images are paused and will not be sent until you resend them.
  - Cancelled—Images will not be sent.
  - Failed—Images were not sent successfully, but you can resend them.
  - Permanently Failed—Image sending failed for a more serious reason and images cannot be resent.
  - Complete—Images have been sent successfully.

**To change the status of images in the queue:**

Select the image and then use the buttons on the right:

- Send—Sends the image.
- Pause—Puts a sending or pending image on hold. The image will not be sent unless you restart it.
- Remove—Removes a selected image from the list.

**To remove all information from the outbound queue:**

Click **Clear History**.

**To close the DICOM Queue window:**

Click the **X** in the upper right corner.

**Creating a Patient CD**

You can create a Patient CD that contains both JPEG and DICOM versions of the patient's images, as well as patient information and image viewing software.

By default, the images saved to the CD are the original versions (as they looked when you clicked Done at the end of the capture process). Changes such as annotations and window/level adjustments are not included. To create a version containing these updates, contact IDEXX Diagnostic Imaging Customer Support 1-877-433-9948.

**To create a Patient CD:**

1. Insert a writeable CD into the disc drive (a CD that can be written only once); **do not** use a RE-writeable CD.

**Note:** You can use a DVD if you have a drive on your computer that will burn DVDs and if the computer used to view the images has a DVD drive.

2. In the Home window, find the patient record, click , and then click Share .

OR

With any of the patient's images open in the Image Viewer window, click Import/Export , and then click Share .

The Sharing window opens. Use the Sharing window to select the images you want to copy to the Patient CD. For more information, see "Using the Sharing Window" on page 61.

3. When you have selected all the images, click . The Select Export Preference window opens.
4. Enter the number of CD copies you want to make, and then click **OK**.

A message states that components are being compiled.

When the CD is finished, a message states that the Patient CD is complete.

5. Click **OK**. The finished CD is ejected automatically.
6. Click **Close**.
7. To view the CD, see "Viewing a Patient CD" on page 72.

**Note:** After you create a Patient CD, you cannot add to or change the information on the CD.

**Tip:** You can choose to save the information to a file folder instead of a CD. See the next section.

#### To save Patient CD information to a file location:

You might choose to save the information to a file if you want to put the images in an email or on a USB flash drive; or you might want to compile the information for Patient CDs throughout the day and then create the CDs at a later time using the CD-creation capabilities in Windows\* software.

1. Follow the previous Patient CD creation procedure **through step 6**.
2. On the Select Export Preference window, select **File Folder**, click **Browse**, select a location, and then click **Save**.
3. Click **OK**. The files are copied to a folder at the designated location. The folder is named "PatientCD" followed by a number. When all files have been copied, a message states that the Patient CD is complete.
4. Click **OK**.

### Viewing a Patient CD

**Note:** The Patient CD has been tested on computers using the Windows\* XP, Windows Vista\*, and Windows\* 7 operating systems. The Patient CD and the viewer software included on the CD may not be compatible with other operating systems, such as Mac OS X.

#### To view a Patient CD:

1. Insert the Patient CD into the CD drive.
2. Double-click the **My Computer** or **Computer** icon on your computer desktop.
3. Double-click the icon for your CD or DVD drive. A list of files on the CD is displayed.
4. Double-click **viewMyCD.bat**. The Patient CD opens, displaying a viewer similar to the one in IDEXX-PACS software
5. Use the tools at the bottom of the window to view and enhance the images.

**Note:** You cannot save the changes you make to the images.

6. When finished, click the **X** in the upper right corner of the window to close the Patient CD viewer, and then remove the CD from the CD drive.

# Managing Client and Patient Records

**IMPORTANT:** If your IDEXX-PACS software is integrated with Cornerstone, ImproMed, or AVImark software, manage all client and patient records in those software systems, not in IDEXX-PACS. Any client or patient updates you make in the IDEXX-PACS software will **not** be returned to your practice management system.

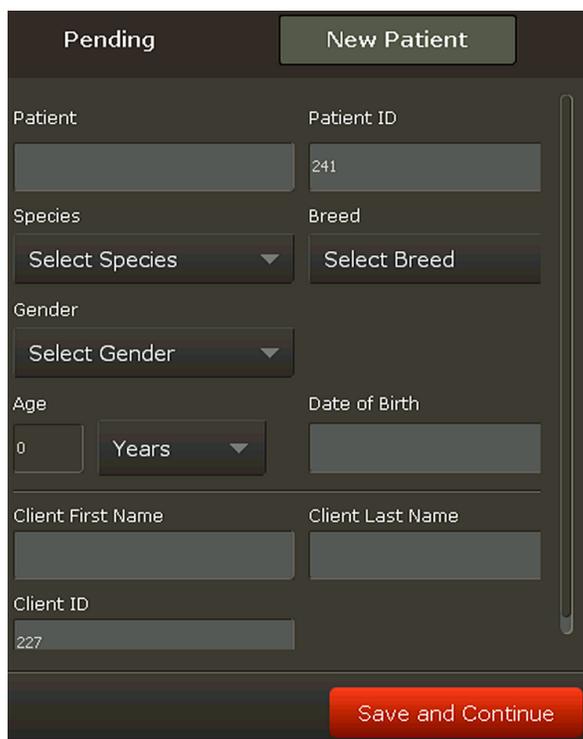
## Adding a New Patient and Client Record

**IMPORTANT:** If your IDEXX-PACS software is integrated with your Cornerstone or AVImark\* software, always add the client/patient record in the Cornerstone or AVImark software. The record will be added to the IDEXX-PACS software the next time you request an image for the patient. If you use another practice management system, be sure to add the records in both systems.

### To add a new patient:

1. In the Home window, enter the patient name in the **New Patient** box.

**Tip:** If the New Patient box is not displayed, click  Capture.



The screenshot shows a 'New Patient' form with the following fields and options:

- Pending** (tab) and **New Patient** (tab)
- Patient** (text input)
- Patient ID** (text input, containing '241')
- Species** (dropdown menu, 'Select Species')
- Breed** (dropdown menu, 'Select Breed')
- Gender** (dropdown menu, 'Select Gender')
- Age** (text input, '0') and **Years** (dropdown menu)
- Date of Birth** (text input)
- Client First Name** (text input)
- Client Last Name** (text input)
- Client ID** (text input, containing '227')
- Save and Continue** (button)

2. If your system automatically assigns patient IDs, the next available ID appears in the Patient ID box; otherwise, enter a patient ID (up to 10 characters).
3. Select the species, breed, and gender.
4. Enter an age (or a date of birth), and then enter the client first and last names.
5. Enter a client ID, if none is displayed automatically.

6. Click **Save and Continue**.
7. Select radiographs, and capture the images for the new patient.

OR

8. To save this record without capturing images, click **Done** on the visual shot tree and click **Done** in the Capture window. The Home window is redisplayed.

#### To add a new client to an existing patient:

1. Open any of the patient's images in the Image Viewer.
2. Click , and then select **Patient/Client Management**.
3. In the **Clients** section, click **Add**. A new client row is added.
4. Enter the new client information.
5. (Optional) To remove the previous client, click in the client row, and then click **Delete**. If you do not delete the previous client, then both clients are considered owners. You can select which client is the primary owner.
6. Click **Save**.

### Updating a Patient or Client Record

**IMPORTANT:** If your IDEXX-PACS software is integrated with your Cornerstone or AVImark software, always update the client/patient record in the Cornerstone or AVImark software. The record will be updated in the IDEXX-PACS software the next time you request an image for the patient. If you use another practice management system, be sure to update the records in both systems.

#### To update a patient or client record:

1. In the Home window, find the patient record.
2. Click the thumbnail in the patient card to open the Image Viewer.
3. Click , and then select **Patient/Client Management**.
4. Update the patient information.
5. To remove a client from this patient, click the client row in the **Clients** section, and then click **Delete**.
6. To associate another client with this patient, click **Add**, and then search for and select the new client record.
7. Click **Save**.

### Deleting a Patient or Client Record

**IMPORTANT:** You cannot delete a patient record, but you can mark it as inactive, as described below. Because all patient records must be associated with client (owner) records, you cannot delete a client record unless you first reassign the associated patients to another client. Be sure to delete the client record in your practice management system as well. For more information, see "Reassigning an Image " on page 52.

**To make a patient record inactive or to delete a client record:**

1. In the Home window, find the patient record.
2. Click the thumbnail in the patient card to open the Image Viewer.
3. Click , and then select **Patient/Client Management**.
4. To make the patient record inactive, select **Inactive** in the upper right corner of the window.
5. To delete a client record, select the client row in the table of search results, and then click **Delete**.
6. Click **Save**.

# Setting Up DICOM<sup>®</sup> Services

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The IDEXX DICOM<sup>®</sup> Services Configuration utility lets you configure your local server so that it can communicate with external devices (e.g., image-capture hardware and other servers), resulting in the successful exchange of medical images and data files. Using the DICOM conformance statements for each device, you can set up your local server to receive data from and transmit data to a wide array of devices.

If you have any questions or require assistance as you configure your local DICOM server, call IDEXX Diagnostic Imaging Customer Support at 1-877-433-9948.

## Overview of DICOM<sup>®</sup> Services Configuration

The DICOM configuration settings ensure successful communication between your local DICOM server and any external device. There are three steps in DICOM configuration:

1. Local Server Configuration—Configure your local DICOM server.
2. Remote Servers Configuration—Identify the external computers and devices that the local DICOM server will communicate with. This may include your practice information management server, and servers or devices outside your practice. Identify each device's name, server address, and port number.
3. DICOM file mapping—Add the manufacturers of the devices your server will communicate with, and then specify a specific device's default location for standard text boxes (e.g., patient name, diagnosis, image type) as defined in the conformance statement for that device. Then you can map that information to your local DICOM server, if necessary. This ensures that the two devices can exchange information with each other.

After you configure your system to use DICOM, you can use DICOM query and retrieve, and you can set up a **modality worklist** connection between the IDEXX-PACS\* software and your practice management system. For more information, see "Importing Images from Remote DICOM Servers Using Query and Retrieve" on page 67 and "Configuring Remote DICOM Servers or Modality Worklist Connections" on page 78

## Configuring the Local DICOM\* Server

**IMPORTANT:** If your Cornerstone server or your IDEXX-PACS server will send DICOM images to other systems or receive images from other systems, configure the Cornerstone or IDEXX-PACS server as a local server. (It is possible for a server to be both a local server and a remote server.)

### Define the local server configuration:

1. In the Home window, click .
2. On the left side of the Settings window, select **DICOM Services** and then **Local Server**.
3. Define Common Server Settings:
  - a. Enter the server's application entity title in the **AE Title** box.

**Note:** If you are setting up IDEXX DICOM services on more than one server, be sure to give the servers different names.

- a. Enter the server port number in the **Port Number** box.
  - b. In the **Transfer Queue Watch Interval** box, specify (in seconds) how long the DICOM server should wait between checking the DICOM queue for images to be sent.
4. Do not change anything in the C-Find Options area.

These advanced features should be changed only in consultation with IDEXX Diagnostic Imaging Customer Support.

5. Define DICOM and Network Settings:
- a. In the **Maximum Number of Clients** box, specify the maximum number of external devices that can access the local DICOM server at one time.
  - b. In the **DIMSE Timeout** text box, specify the number of seconds that can elapse before the DICOM message service element (DIMSE) closes communication with an external device.

After the local DICOM server opens a line of communication with an external device, it expects to receive a request from that device within the DIMSE timeout period. If the request is not received within the timeout period, the line is closed and the association between the two devices ends.

- c. In the **Socket Close Delay** text box, enter the amount of time, in milliseconds, that can pass before the socket between the local device and an external device closes after a line of communication has ended.

A socket is an endpoint for communication between two devices. When a socket is opened, a line of communication (or association) is created between the two devices. When that line of communication is ended, the socket must be closed. This text box defines how long it takes before the socket is closed.

- d. In the **Maximum PDU Length** text box, specify the maximum protocol data unit (PDU). This value can be found in your local DICOM server's conformance statement.

For example, if this value is 60 seconds and the local DICOM server has received a request to accept an image from a device, the server will open a line of communication to the sending device. If no image is received within 60 seconds, the local server will close the line of communication.

- e. In the **Request Timeout** text box, specify the number of seconds that can elapse before the local DICOM server times out. This text box defines how many seconds can pass after the local server receives a request.
  - f. Select the **Incoming DICOM Server Registration Required** check box if you want the IDEXX software to accept DICOM files only from servers that are on the remote servers list. If this check box is not selected, DICOM files will be accepted from any remote server.
6. Specify Image Import Settings:
- a. In the **Watch Directory** text box, specify the folder from which DICOM services should automatically import images. The default folder name is dicomdrop.
  - b. In the **Watch Interval (in seconds)** box, specify how frequently DICOM Services should check the watch directory.

- c. In the **Patient Match Level** box, select the information used to match an image to a patient record.
  - d. If you use IDEXX-PACS software with a **non-IDEXX** imaging system, you can use practice management system patient IDs to link incoming DICOM images and telemedicine reports with patients: Select **Use PIMS Patient ID**, and then select your system from the drop-down list.
7. Click **Save** to save and close the Settings window, or click **Apply** to save without closing.

## Configuring Remote DICOM Servers or Modality Worklist Connections

**Tip:** If you are setting up a connection to IDEXX Telemedicine Consultants, use the Telemedicine Provider settings. See "Setting Up a Telemedicine Connection" on page 81 for more information.

To enable a modality worklist connection between your practice management system and the IDEXX-PACS software, follow the steps below to define your practice management system server as a remote DICOM server.

### To add or edit a remote or modality worklist server:

1. In the Home window, click .
2. Select **DICOM Services > Remote Servers**.
3. Click **Add New Server**, or to edit a server, click in the server row.
4. Add or edit the following information. The person or company in charge of the remote server can provide values for items **a** through **d**.
  - a. **Server Name:** The name of the server you want to send DICOM images to (or the name of your practice management system server if setting up a modality worklist connection).
  - b. **Server Address:** The server's IP address.
  - c. **Port #:** The server's port number.
  - d. **AE Title:** The application entity title (i.e., the name) of the server.
  - e. **Support Query Retrieve:** Select this box if you want to be able to search for images on the remote server and import them into your IDEXX-PACS server. For more information, see "Importing Images from Remote DICOM Servers Using Query and Retrieve" on page 67.

**Note:** You may need to use the scroll bar at the bottom of the table to bring the Support Query Retrieve text box into view.
5. To add or edit another server, **repeat steps 3 and 4**.
6. If the remote server is your own practice management system server and you want to set up a modality worklist connection to that server:
  - a. In the **MWL SCP** drop-down list, select the practice management system server.
  - b. If you want the IDEXX Diagnostic Imaging software to send status messages about the request back to that server, select the server name in the **MPPS SCP** dropdown list.

**Note:** In some cases, a server is not able to receive these status messages. If so, the server will display error messages related to the MPPS messages. To stop receiving these error messages, simply select the empty option in the MPPS SCP list.

7. Click **Apply**.
8. To test the connection, select the server in the remote server table, and then click **Test Server** on the right.
  - If the test is successful, a "Test Successful" message is displayed. Click **OK**.
  - If the test fails, the message "Unable to echo server: ###.###.###.###" appears (# equals the IP address of the remote server). Click **OK** to continue, or click **Details** to view data about the failure.

Recheck the information you entered, check all cords and connections, and make sure that the server is powered on. If the connection still fails, contact a support representative for the server software or contact IDEXX Diagnostic Imaging Customer Support.

9. Click **Save** to save settings and close the window.

#### To delete a remote server:

1. In the Home window, click .
2. On the left side of the Settings window, select **DICOM Services** and then **Remote Servers**.
3. In the Remote Servers table, select the server, and then click **Delete**.
4. Click **Save** to save settings and close the window, or click **Apply** to save without closing.

## DICOM File Mapping

**IMPORTANT:** Do not map DICOM files unless you are experienced in working with the DICOM standard. For help with communication between the IDEXX-PACS server and other DICOM devices, contact IDEXX Diagnostic Imaging Customer Support (1-877-433-9948). The IDEXX DICOM conformance statement is available at [idexx.com/digital](http://idexx.com/digital) in the Quick Links box.

### How fields are defined for a DICOM device

Each DICOM device has its own DICOM conformance statement. One component of this statement defines the device's fields.

Most manufacturers use a DICOM-standard **group number** and **element number** (such as "0008, 0070") to define each common field (such as patient name, patient ID, study date, referring physician name). But sometimes a manufacturer may assign a different group number and element number to one of these common fields, or may not assign a required value to the field, or may assign a value that must be changed for use with the IDEXX-PACS server.

When that happens, the relevant fields from the sending device must be mapped to the fields of the IDEXX-PACS server.

### How fields are mapped

The **Mapping Rules** window lets you select a manufacturer/modality and then create a mapping rule to map specific fields from that manufacturer to the corresponding IDEXX-PACS fields.

The window contains three tables:

- **Rules** table

A list of existing mapping rules.

Example rule name:

Replace the Window Width value in EliteVision files.

- **Rule Triggers** table

A list of tag values that, if present in a DICOM file, trigger application of the selected rule. In the example below, the rule will be applied only if tag “0008,0070” has the value “EliteVision.”

Example rule trigger:

Tag	Value
0008, 0070	EliteVision

- **Rule Mapping Actions** table

The mapping actions that occur when the rule is triggered. There are two possible actions: Replace the current value of a tag with a new value, or replace the current value of a tag with the value from another tag. You can also specify whether mapping occurs always or only if the initial tag is blank. In the example below, the value in tag “0028, 1051” will always be replaced with the value “2000.”

Example mapping action:

Tag	Action	Value	When
0028, 1051	Replace with value	2000	Always

### To map the DICOM fields:

1. In the Home window, click .
2. On the left side of the Settings window, click **DICOM Services**, and then select **DICOM File Mapping**.
3. In the **Rules** table, click , and enter a name for the new rule. The name should clearly define the function of the rule.
4. In the **Rule Triggers** table, click , and enter the tag IDs and tag values that must be present in the DICOM file for the rule to be triggered.
5. In the **Rule Mapping Actions** table, click , and then:
  - a. Enter the ID of the tag to be replaced.
  - b. Select the type of replace action.
  - c. Enter the replacement value.
  - d. Select the check box if the rule should be applied only when the tag is blank.
6. Click **Save** to save settings and close the window, or click **Apply** to save without closing.

## Setting Up a Telemedicine Connection

### To set up an online connection to your telemedicine provider:

1. In the Home window, click .
2. On the left side of the System Settings window, click **Telemedicine Provider**.
3. To add a provider, click **Add**.
4. In the **Name** box, type a display name for this provider.
5. Skip the Homepage text box—it has been provided to support future functionality.
6. In the **API URL** text box, type the web address for the telemedicine provider. Be sure to start the address with **http://** or **https://**, as instructed by your telemedicine provider.  
  
For IDEXX Telemedicine Consultants, type the following:  
**https://api.vetmedstat.com/vmsintegrations/vmstms.asmx**
7. In the **Login** and **Password** text boxes, type the login name and password you use to log in to the telemedicine provider's website.
8. In the **Authentication** drop-down list, choose the password authentication method that your telemedicine provider specifies.
9. Click the row to select it, and then click **Apply**.
10. Click **Test Tele-provider**. A message tells you whether the connection is successful.
11. Click **Save** to save and close the window, or click **Apply** to save without closing.

# Setting Software Options

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**IMPORTANT:** If your IDEXX-PACS software is integrated with your practice management system, set all non-imaging software options (e.g., client/patient, practice/staff) in those systems. Before modifying any exam tree (shot tree) settings, contact IDEXX Diagnostic Imaging Customer Service.

The **System Settings** window lets you:

1. Add and delete staff members
2. Add practice information.
3. Set up DICOM<sup>®</sup> services.
4. Set up a telemedicine connection.
5. Customize your software in many other ways.

**To access system settings:**

1. In the Home window, click . The System Settings window opens.
2. On the left side of the window, click the settings category you want.
3. In the right pane, specify the setting values.
4. Click **Save** to save and close the window, or click **Apply** to save without closing.

## Setting Practice Options

**IMPORTANT:** If your IDEXX-PACS software is integrated with your practice management system, set all non-imaging software options (e.g., client/patient, practice/staff) in those systems, not in IDEXX-PACS software. Use the IDEXX-PACS options only if your IDEXX-PACS software is a standalone system.

When you first start the IDEXX-PACS\* imaging software, the Practice Configuration window opens so that you can enter your practice information. Your installer can help you set up the practice and staff options needed before you start using the software.

You can change these settings if necessary. Refer to the sections below the system settings window.

### Creating a System Administrator Account

When the IDEXX-PACS software is installed, there is one predefined user account named *administrator* (password: *admin*) to allow you to log in. The administrator account cannot be deleted.

Use this default administrator account to create another administrator account specific to your practice.

The administrator is responsible for:

- Maintaining the IDEXX-PACS software
- Setting staff passwords
- Designating which parts of the software each staff member can access
- Deleting images if necessary

**IMPORTANT:** If your IDEXX-PACS software is integrated with your Cornerstone software, set the administrator account in that system, not in the IDEXX-PACS software. Use the IDEXX-PACS administrator account only if your IDEXX-PACS software is a standalone system.

### To create an administrator account:

1. Log on as **Administrator**, and type *admin* as the password (asterisks will appear in place of the characters); click **OK**. If this is the first time you've started the IDEXX-PACS software, you are prompted to enter practice information:
  - a. Click **OK**.
  - b. At the top of the Practice Configuration window, type the practice name and address. This information will be printed on reports and included when you send cases to specialists.
  - c. To add contact information, click **Add Contact** and enter your phone number, a description, and any notes.
  - d. Click **Save**.
2. In the Home window, click .
3. On the left side of the System Settings window, click **Practice** and then:
  - a. Click **Add** to display an empty Staff Information form.
  - b. Type an ID for the new system administrator.
  - c. Enter the administrator's first and last names and other information, as needed.
4. Click **Security**.
5. In the **Password** and **Confirm Password** text boxes, type a password for the administrator.
6. Select the **Administrator** check box.
7. At the bottom of the window, click **Select All** to give this account access to all parts of the software.
8. When finished, click **Save**.

You now have a system administrator account for the IDEXX-PACS software.

### Updating Practice Information

**IMPORTANT:** If your IDEXX-PACS software is integrated with your practice management system, set all non-imaging software options (e.g., client/patient, practice/staff) in those systems, not in IDEXX-PACS software. Use the IDEXX-PACS options only if your IDEXX-PACS software is a standalone system.

Practice information is printed on your telemedicine reports, included when you submit a case to a specialist, and used when synchronizing remote and master computers.

### To update practice information:

1. In the IDEXX-PACS Home window, click .
2. On the left side of the System Settings window, click **Practice**.
3. At the top of the Practice Configuration window, type the practice name and address.

4. To add contact information, click **Add Contact**. A line is added to the Contact Information table.
5. Type your phone information, including a description and any notes.
6. To update existing information, click to select the text box and then edit the information.
7. Click **Save** to save and close the window, or click **Apply** to save without closing.

### Setting Single Species Mode

In single species mode, only one species and its related breeds are displayed as choices when you search for patients or set up patient information.

#### To set up single species mode:

1. In the Home window, click .
2. On the left side of the System Settings window, click **Global Settings**.
3. In the **Set Single Species Mode** drop-down list, select the species that you want.
4. Click **Save** to save and close the window, or click **Apply** to save without closing.

### Setting the System Type

The System Type options specify the kind of IDEXX Diagnostic Imaging system you are using. **DO NOT** change any of the system type options without consulting IDEXX Diagnostic Imaging Customer Support. For service within the United States or Canada, call 1-877-433-9948.

### Setting Display Formats

You can specify the format to be used for dates, phone numbers, addresses, and units of measurement.

#### To set format options:

1. In the Home window, click .
2. On the left side of the System Settings window, click **Formats**.
3. Select your preferred date and phone number formats and your preferred units of measurement.
4. Click **Save** to save and close the window, or click **Apply** to save without closing.

### Setting Up Email

**Tip:** If your IDEXX-PACS software is integrated with your Cornerstone Software, email settings are typically the same for both systems. However, you can change the IDEXX-PACS email settings, for example, if you want a separate account used only for sending images.

#### To set up email:

1. In the Home window, click .
2. On the left side of the System Settings window, click **Email**.
3. In the **SMTP Server Name** text box, type the name of your email server.

4. In the **SMTP User Name** and **SMTP Password** text boxes, type the information that the software needs to log into your email server.
5. In the **SMTP Port** text box, type the number of the port to be used for sending email.
6. In the **Default Email Attachment File Type** drop-down list, select the default file format for sending images. You can select a different format when you email images.
7. In the **Default Send Email Address** text box, type the address to be listed as the sender.
8. In the **Reply Email Address** text box, type the address to which the recipient should reply.
9. Click **Save** to save and close the window, or click **Apply** to save without closing.

## Setting Up Monitors and On-Screen Keyboard

### To use multiple monitors:

IDEXX-PACS automatically detects multiple monitors and displays the Home window on monitor 1 and the Image Viewer on monitor 2.

If you have more than two monitors, you can display a separate Image Viewer on each additional monitor.

### To switch windows from one monitor to another:

Click and drag each window to the other monitor.

### To enable the on-screen keyboard for a touch-screen monitor:

1. In the Home window, click .
2. On the left side of the System Settings window, click **Monitor Preferences**.
3. Select **Enable On-Screen Keyboard**.
4. Click **Save** to save and close the window, or click **Apply** to save without closing.

## Setting Up Secure Search Display

To help protect confidentiality, you can have the search feature in the Home window return results only after you have typed the full name exactly or only after you have typed a certain number of characters.

### To set up secure search display options:

1. In the Home window, click .
2. On the left side of the System Settings window, click **Global Settings**.
3. Under **Search Matching Options**, select one of the following:
  - None—Returns a list of results no matter how many characters you type.
  - The middle button (in front of a blank text box and the word “Characters”)—Specifies a minimum number of characters for searches. Type a number in the text box.<sup>†</sup>
  - Exact Match—Returns results that exactly match what you type. For example, if you type Jo, the software returns patients or clients named Jo, but not Joseph or Joe.<sup>†</sup>

**†Note:** If you specify a required number of characters or an exact match, you must use the patient name, the client first name, or the client last name in every search. If you search without this information, no search results will be displayed.

4. Click **Save** to save and close the window, or click **Apply** to save without closing.

### Setting Up Secure Image Display

In secure mode, the IDEXX-PACS software displays only images that you created or (if you are a veterinarian) images that were created for you as a veterinarian.

#### To set up secure mode:

1. In the Home window, click .
2. On the left side of the System Settings window, click **Global Settings**.
3. Select the **Enable Client Patient Security** check box.
4. Click **Save** to save and close the window, or click **Apply** to save without closing.

### Setting Up Auto-Logon

Auto-logon lets anyone at your practice use the IDEXX-PACS software without entering a user name or password. If IDEXX-PACS software is integrated with your practice management system, logon is automatic; you do not need to set it up.

**IMPORTANT:** Turning on auto-logon reduces the security of the IDEXX-PACS software. Anyone can open the program if your computer is left unattended.

#### To turn on/off auto-logon:

1. In the Home window, click .
2. On the left side of the System Settings window, click **Global Settings**.
3. To turn on auto-logon, select the **Auto Logon** check box at the bottom of the window; to turn it off, clear the check box.
4. Click **Save**.
5. Close and then restart the IDEXX-PACS software.

### Setting Up the IDEXX I-Vision Mobile\* Application

#### To set up the IDEXX I-Vision Mobile\* Application on an iPad tablet:

1. Open the Safari browser.
2. Type "http://" followed by the IP address or PC name for your server, and then type the following exactly:

:8081/i-vision-mobile

For example: http://123.456.789.10:8081/i-vision-mobile

**Note:** The IDEXX representative who installed the IDEXX I-Vision Mobile Application should have given you the IP address or PC name.

3. Log in to the mobile application.
4. Tap  and select **Add to Desktop**. Be sure to do this after logging in.
5. Close the browser.
6. Tap the **IDEXX I-Vision Mobile Application** icon on the tablet desktop to start the application. (From now on, always use the icon.)

### To set up the IDEXX I-Vision Mobile Application on an Android™ tablet:

You'll need both the default Android™ browser and the Dolphin Browser™ for Android.

1. Open the default Android browser.
2. Download the **Dolphin Browser for Android** from the Google Play™ store.
3. Type "http://" followed by the IP address for your server, then type the following exactly:

:8081/i-vision-mobile

For example: http://123.456.789.10:8081/i-vision-mobile

**Note:** The IDEXX representative who installed the IDEXX I-Vision Mobile Application should have given you the IP address.

4. Log on to the mobile application.
5. Tap  in the upper right of the Android browser, and then tap + (Add). Be sure to do this after logging on to the mobile application.
6. Tap **Add to home screen**.
7. Tap  in the upper right of the Android browser again, and then tap .
8. Tap **Fullscreen**. When you open the mobile application, the application will occupy the whole tablet screen.
9. Close the browser.
10. Tap the **IDEXX I-Vision Mobile Application** icon  on the tablet desktop to start application. (From now on, always use the icon.)

## Setting Staff Options

**IMPORTANT:** If your IDEXX-PACS software is integrated with your practice management system, set all non-imaging software options (e.g., client/patient, practice/staff) in those systems, not in IDEXX-PACS software. Use the IDEXX-PACS options only if your IDEXX-PACS software is a standalone system.

### Adding, Deleting, Updating Staff Information

If your IDEXX-PACS software is connected to your Cornerstone software, you should manage all staff information **in Cornerstone**; you do not need to follow the instructions below.

However, if your IDEXX-PACS software is a **standalone** system, follow the steps below to:

- Add/delete/update user information.
- Set user names and passwords. If you do not want to require user names and passwords,

set up auto-logon. For more information, see "Setting Up Auto-Logon" on page 86.

- Specify administrators.

### To manage user information:

1. In the Home window, click .
2. On the left side of the System Settings window, click **Staff Settings**, and then select **Staff**.
3. Click **Add**, or select a staff name and click **Edit**.
4. Enter the staff member title, name, and Staff ID as needed (the ID can consist of letters, numbers, or a combination and will become the staff person's user name).
5. Select a classification from the drop-down list.
6. Enter the staff member's license information (if applicable).
7. Enter any notes.
8. To enter contact information:
  - a. Click **Add Phone** to display a new row.
  - b. Enter a description, phone number, extension, and any notes.
9. To assign a password, or designate an administrator:
  - a. Click **Security**,
  - b. Provide the requested information, and then click **Save**.

**IMPORTANT:** If your IDEXX-PACS software is integrated with your Cornerstone software, passwords are **not** required for IDEXX-PACS. If your IDEXX-PACS software is **not** integrated with Cornerstone and you want to require users to log on, make sure that auto-logon is **not** selected on the Global Settings page. For more information, see "Setting Up Auto-Logon" on page 86.

10. To mark the staff member as Inactive, clear the check box at the bottom of the window. The default setting is Active.
11. Click **Close**.

### To delete a staff member:

1. In the Home window, click .
2. On the left side of the System Settings window, click **Staff Settings**, and then click **Staff**.
3. Select the staff member in the **Current Staff** table.
4. Click **Delete**.
5. Click **Close**.

### Setting Up Staff Classifications

Staff classifications organize staff members into groups, such as doctors or technicians.

**To enter classifications:**

1. In the Home window, click .
2. On the left side of the System Settings window, click **Staff Settings**, and then select **Staff Classifications**.
3. Click **Add** (or **Edit** if you are changing existing information).
4. In the **Description** text box, type a name for a new classification or edit the current name.
5. Click **OK**.
6. When you are finished, click **Close**.

**To set administrator privileges:**

See "Adding, Deleting, Updating Staff Information" on page 87

**Changing Your Password****IMPORTANT:**

- The Change Password option is **not** available if auto-logon is enabled.
- If your IDEXX-PACS software is integrated with Cornerstone software, no password is needed for IDEXX-PACS.
- Passwords can also be changed on the [Staff settings](#) window.

**To change your own password:**

1. Click your user name in the upper right corner of the window, and then select **Change Password**.
2. Enter your old password and new password as required. As you type the new password, asterisks appear in place of the characters.
3. Click **Save**.

**See also:**

[Setting Up Auto-Logon](#)

"Adding, Deleting, Updating Staff Information" on page 87

**Setting Image Options****Setting Up the Plate Handle Locator**

If you are using an IDEXX-DR\* 1417 or EquiView\* Digital Imaging System, you can add a plate handle locator to your images to indicate plate orientation.

**To add the plate handle locator:**

1. In the Home window, click .
2. On the left side of the System Settings window, click **Global Settings**.

3. Select the **Show Plate Handle Locator** check box.
4. Click **Save** to save and close the window, or click **Apply** to save without closing.

### Setting Up Imaging Units, Compression, and Export Options

#### To set up imaging options:

1. In the Home window, click .
2. On the left side of the System Settings window, click **Imaging**.
3. In the Image Scan Settings area, do the following:
  - a. Select your scanner in the TWAIN Source text box.
  - b. Adjust the resolution values in dots per inch (dpi) in the Horizontal Resolution and Vertical Resolution text boxes.
  - c. Resolution text boxes.
  - d. Adjust the pixel type (black-and-white, grayscale, or color) in the Pixel Type text box.
4. In the Image Viewer area, select a unit of measure (centimeters, millimeters, or inches) for the Ruler annotation tool.
5. In the Image Capture Settings area:
  - a. From the **Distance Units** drop-down list, select the default unit for the distance between the detector plate and the x-ray source.
  - b. From the **Exposure Units** drop-down list, select the default unit for x-ray exposure time (AmpSeconds [As], milliAmpSeconds [mAs], or microAmpSeconds [ $\mu$ As]).
6. Under **DICOM Compression Settings**, select the compression type used when sending or saving DICOM images:
  - **RAW images**—DICOM images are not compressed.
  - **JPEGLossless**—Images are compressed with little or no loss of quality.

**Note:** In most cases, leave the default setting (RAW). Compressing an image may improve image transfer time, but it also reduces quality.

7. In the Image Export area:
  - a. If images look considerably different after being sent or saved with DICOM, check **Apply Window/Level to Exported Images** in the Image Export area. This changes how window and level (contrast and brightness) values are saved.
  - b. If you want images that you print or send to contain overlay information from the Image Viewer, select **Apply Overlays to Exported Images**.
  - c. If you want the images that you print or send to contain annotations created from the Image Viewer, select **Apply Annotations to Exported Images**.
8. Click **Save** to save and close the window, or click **Apply** to save without closing.

### Setting Up Image Rotation

Upon image capture, the IDEXX-PACS software automatically rotates each image based on the shot. However, if you use an IDEXX mobile equine system, you can customize the rotation settings for each radiograph based on how you hold the detector plate.

### To customize radiograph rotation:

1. In the Home window, select .
2. On the left side of the System Settings window, click **Exam Trees**.
3. Click the + signs to open the folders until you find the group containing the shot you want to customize. Shots are marked with page icons like this: .
4. Click the name of the shot. Information about that shot is displayed on the right.
5. In the **Orientation Setting** drop-down list, select an orientation. The boxes below it display information about your choice:
  - Angle—Displays the number of degrees the image will be rotated clockwise.
  - Flip—Displays the axis around which the image will be flipped (Vertical, Horizontal, or None).

**Note:** IDEXX strongly recommends that you **do not** adjust any of the other settings on the Exam Tree Editor window without consulting IDEXX Diagnostic Imaging Customer Support and backing up your existing exam tree. If you want to add customized exam type collections or new individual shots, contact IDEXX Diagnostic Imaging Customer Support. For service within the United States or Canada, call 1-877-433-9948..

6. When finished, click **Save** to save and close the window, or click **Close** to exit without saving.

### Setting Up the Technique Prompt

The technique prompt on the Image Capture window can display the recommended generator settings for each shot, as determined by the technique chart that IDEXX created for your system. To set up the technique prompt, you must enter the technique chart values.

- For a DR system, your technique chart is set up by weight. Contact IDEXX Diagnostic Imaging Customer Support at 1-877-433-9948 if you want to use thickness instead.
- For a CR system, the chart is set up by thickness. The technique prompt is not available for IDEXX-CR 1417 systems that do not have ClearCapture Dx\* Image Processing Software installed.

### To set up the technique prompt:

1. In the Home window, click .
2. On the left side of the System Settings window, click **Exam Trees > Capture technique chart**. The header row for a table of technique chart values appears.

**IMPORTANT:** Do not change any other settings related to the exam tree without consulting IDEXX Diagnostic Imaging Customer Support.

3. In the **Unit of Measurement** drop-down list, select the unit you use for measuring patients, such as kilograms (kg) or centimeters (cm).
4. Click **Add**. A blank row appears in the table.
5. In the **Measurement Range** text box, type a range of weights or thicknesses.

- In the **kVp** and **mAs** text boxes for each anatomical region, type the values from your technique chart.

**Note:** The software extrapolates from these three general region settings to display technique values for all shots.

- To enter values for another anatomical thickness or weight, click **Add** and repeat **steps 5 and 6**.
- To delete a row, click in the row to highlight it, and then click **Delete**.
- Click **Save** to save and close the System Settings window.
- Restart the IDEXX-PACS software to apply the new settings.

### Setting Up Auto-Routing and Auto-Exporting

Auto-routing automatically sends images by DICOM® to a specified destination, such as a consultant.

Auto-exporting lets you send images to a file folder.

For auto-routing, you have a choice of settings:

- **Manual**—Deactivates auto-routing. You can still send images manually by means of DICOM. For information about sending images manually by DICOM, see "Sending Images to Remote DICOM Servers" on page 66
- **Semi-Automatic**—Lets you select the images and the destinations before sending.
- **Automatic**—At the end of the capture process, images are sent automatically to a designated address.

The DICOM queue lets you check progress and pause, restart, or cancel image sending. For more information, see "Using DICOM to Send and Receive Images" on page 66.

### To set up auto-routing and/or auto-exporting:

- In the Home window, click .
- On the left side of the System Settings window, click **DICOM Services**, and then select **Auto-Routing**
- Under **Auto-Routing Mode** in the upper left, select **Manual**, **Semi-Automatic**, or **Automatic**.
- In the **Remote Servers** box, select the image destination(s).
- To auto-export the images to a file folder, select the **Auto-export to file folder** check box, click **Browse**, and then select the folder location.
- Click **Save** to save and close the window, or click **Apply** to save without closing

### Setting Up IDEXX Web PACS Storage Options

If you subscribe to the IDEXX Web PACS software or the IDEXX ImageBank\* storage system, follow the steps below to view the image storage limits and to specify file types for upload.

**Note:** The window also includes settings for uploading legacy (older) images to the cloud; use those settings only if you have already purchased a [legacy image upload](#) kit from IDEXX.

### To view cloud storage limits and to set file types:

1. In the Home window, go to **Settings**  > **IDEXX Web PACS Storage**.

**Note:** To change the Cloud Storage Level (the maximum number of studies you can upload per month), contact your IDEXX representative. Use the Uploading Legacy Images to IDEXX Web PACS settings only if instructed to do so by IDEXX. Talk to your IDEXX representative for more information.

2. To specify the types of files to upload to the cloud (besides DICOM), in the Upload File Types area, select options under **DICOM plus**.
3. To specify the storage duration on your local drive (that is, how long images should remain in your local IDEXX-PACS software after being uploaded to the cloud), select an age in days or a disk space limit in gigabytes.

(Because your images are being stored in the cloud, copies of the images are kept on your local system only for a limited time.)

4. Click **Save** to save and close the window, or click **Apply** to save without closing.

### See also:

[Uploading Legacy \(Older\) Images](#)

### Setting Up Auto-Backup Options

These options control automatic backup functions, such as the time needed to shut down the server before a backup.

### To set auto-backup options:

1. In the Home window, click .
2. On the left side of the System Settings window, click **Backup**.
3. In the **Server Shutdown Time** box, enter the amount of time, in seconds, needed to shut down the server. The IDEXX-PACS\* software waits this specified amount of time before backing up.
4. In the **Server Restart Time** box, enter the amount of time, in seconds, needed to restart the server.
5. In the **Backup Mode** drop-down list, select one of these options:
  - Full—The software backs up a complete set of images and the entire database (the cstone.db file, the cstone.log file, custom .ini files, and installation configuration files created when the program was installed). The software compares the images and data to the information in the backup file and backs up only images or data files that have changed.
  - External—You have a separate program in place to manage the backup process.

**IMPORTANT:** This option turns off the automatic IDEXX-PACS backup functionality.

It also disables the Backup System command in the Tools  menu.

- **Data Only**—The software backs up only your data files. Select this option if you use a separate program to back up your images. The Images folder will not be included in the backup process.
6. In the **Backup Location** box, type the location on your computer or network where you want to store your backup files.
  7. In the **Auto Backup** area, specify when to back up:
    - Auto Backup on Close—The system is backed up when you shut down the software.  
OR
    - Auto Backup Ever—The system is backed up at timed intervals; enter a number of hours.

**IMPORTANT:** The backup timer counts only the time the software is running. The timer stops when you shut down the IDEXX-PACS software and resumes when you restart it.

8. Click **Save**.

### Setting Up Archive Alerts

Archiving is not required, but if you choose to archive images, you can have the IDEXX-PACS software alert you whenever it's time to archive. For information on how to archive images, see "Archiving Images" on page 58.

#### To set the archive alert:

1. In the Home window, click .
2. On the left side of the System Settings window, click **Archive**.
3. Select the **Enable Archive Alerts** check box.
4. In the **Alert Frequency** area, select whether to be alerted after a number of days or after a certain number of images, and then set the value.
5. In the **Archive Location** box, specify where to store the archived files.
6. Click **Save** to save and close the window, or click **Apply** to save without closing.

When the value of days or images is reached, a message alerts you that it is time to archive your images. You will also be prompted to archive if your Images folder nears its storage capacity.

### Setting the Duration of Paused Studies

By default a paused study closes after 4 hours, unless it is reopened before that time.

You can change the length of time a paused study remains open, up to 24 hours. Or you can choose to close paused studies at a specific time of day, for example, at the practice's closing time.

#### To set the duration for paused studies:

1. In the Home window, click .
2. On the left side of the System Settings window, click **Global Settings**.
3. Under Study Duration Preferences, select either **Study Duration** or **Time of Day**, and then

use the up/down arrows to set the value.

4. Click **Save** to save and close the window, or click **Apply** to save without closing.

### Setting Up Imaging Shortcuts

For more information about shortcuts, see "IDEXX-PACS\* Imaging Shortcuts" on page 11.

#### To turn shortcuts on or off:

1. In the Home window, click .
2. On the left side of the System Settings window, click **User Settings**.
3. Check or clear the **Enable Imaging Shortcuts** check box.
4. Click **Save** to save and close the window, or click **Apply** to save without closing.

### Managing Favorite Shots Lists

Your favorite shots lists are displayed in tabs on the Add Shots window.

#### To change the order of the lists on the Add Shots window, or to delete a list:

1. In the Home window, click .
2. On the left side of the System Settings window, click **Exam Trees**, and then select **Shot Favorites**.
3. To change the order of the lists on the Add Shots window, select a list, and then click **Move Up** or **Move Down**.
4. To delete a favorite shots list, select it and then click **Delete**.

## Setting Client and Patient Options

**IMPORTANT:** If your IDEXX-PACS software is integrated with your practice management system, set all non-imaging software options (e.g., client/patient, practice/staff) in those systems, not in IDEXX-PACS software. Use the IDEXX-PACS options only if your IDEXX-PACS software is a standalone system.

### Setting Up Client and Patient IDs and Default Species

#### To specify client and patient ID assignment and default species:

1. In the Home window, click .
2. On the left side of the System Settings window, click **Client and Patient**.
3. Under **Do you assign Client IDs in your practice?** specify whether you want to assign your own client IDs or have the software assign them for you (in this case, specify the number for the next client ID).
4. Under **Do you assign Patient IDs in your practice?** specify whether you want to assign your own patient IDs or have the software assign them for you (in this case, specify the number for the next patient ID).

5. In the **Species** text box, select the default species for new patient records. You can change the value when entering a record.
6. Click **Save** to save and close the window, or click **Apply** to save without closing.

### Setting Up Patient Species and Breeds

The patient species that have been preloaded into the IDEXX-PACS software include canine, feline, equine, and several others. You can add other species and breeds as needed.

#### To add or edit a species or breed:

1. In the Home window, click .
2. On the left side of the System Settings window, click **Species and Breeds**.
3. In the **Species** table:
  - To add a species, click **Add Species**, type an ID (of 1–3 characters), and type a name. Check the box in the **Large** column if this is a large animal. Use the drop-down list in the **Weight** column to select a measure of weight.
  - To update information, select the text box you want, and then edit the information.
  - To delete a species, click the row for that species, and then click **Remove Species**.

When you select a row in the Species table, the related breeds appear in the **Breeds for** table.

**Note:** The name of this table changes to reflect the species. For example, if the species is feline, this table is Breeds for Feline.

4. In the **Breeds for** table:
  - To add a breed, click **Add Breed**, type an ID of no more than three letters, and type a name for the breed.
  - To update information, select the text box you want, and then edit the information.
  - To delete a breed, click the row for that breed, and then click **Remove Breed**.
5. Click **Save** to save and close the window, or click **Apply** to save without closing.

### Setting Up Patient Sex Information

Patient sex information is preloaded in your software, but you can add or change the information.

#### To add or edit patient sex information:

1. In the Home window, click .
2. On the left side of the System Settings window, click **Sex**.

3. In the **Sex Information** table:
  - a. To add a sex, click **Add Sex**, type a description, and, if necessary, select an option from the **Modified** drop-down list.
  - b. To update information, select the text box, and then edit the information.
  - c. To delete a sex, click the row, and then click **Remove Sex**.
4. Click **Save** to save and close the window, or click **Apply** to save without closing.

# Using Telemedicine

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You can send images to IDEXX Telemedicine Consultants or to other telemedicine providers directly from the IDEXX-PACS\* software. You can also track the status of the telemedicine case and receive the consultant's report.

First, set up the IDEXX-PACS software to communicate with your telemedicine provider. See "Setting Up a Telemedicine Connection" on page 81.

After the setup is complete, you can start a telemedicine case from either the IDEXX-PACS Home window or the Image Viewer.

**Note:** If you choose to submit the case directly through the telemedicine provider's website (not through the IDEXX-PACS software), the case status will still be visible within the software, as long as the patient is in the IDEXX-PACS database. If the patient is new, or cannot be found in the database, you can match telemedicine results to the patient by using the telemedicine queue to import the missing case. For more information, see "Importing Cases Submitted Outside the IDEXX-PACS\* Software" on page 100.

## Submitting a Telemedicine Case

Before you can submit a case to a telemedicine provider, you must set up the telemedicine connection. For more information, see "Setting Up a Telemedicine Connection" on page 81.

### To start a telemedicine case:

1. In the Home window, find the patient record, and in the patient card click , and then click **Share** .

OR

With the image open in the Image Viewer, click **Import/Export** , and then click **Share** .

2. Use the Sharing window to select the radiographs to submit. For more information, see "Using the Sharing Window" on page 61.

**Tip:** You can also add DICOM ECG files to the case, if you have imported them into the IDEXX-PACS software or if the files have been uploaded from the CardioPet\* software. ECG files are identified by a heart icon .

3. Click . The telemedicine provider's website opens, and selected images are automatically uploaded to the site.
4. Follow instructions on the website to fill out the required information, upload any supporting files, and submit the case.
5. Close the browser window.
6. Click **Close** to close the Sharing window.

## Viewing the Status of a Telemedicine Case

### To view the case status:

1. In the Home window, find the patient study.

OR

With the patient record open in the Image Viewer, find the study on the right side of the window.

A paperclip means the study is associated with a telemedicine case:



2. Note the paperclip color:
  - Yellow—Submitted or in process
  - Green—Completed
  - Red—Error or missing information
  - Gray—No images associated with case. The gray paper clip appears above the study in the Image Viewer window.
3. Click the paperclip to open the Case window to view case details and open case reports.

## Updating or Deleting a Telemedicine Case

### To update or delete a case:

1. In the Home window, find the patient study.

OR

With the patient record open in the Image Viewer, find the study on the right side of the window.

You'll know a study is associated with a telemedicine case by the paperclip icon:



2. Click the paperclip to open the Case window.
3. Click **View Case**. The telemedicine provider's website opens.
4. On the provider's website, update or delete the case, as needed, and then close the browser.

### To access the IDEXX Telemedicine Consultants website without selecting a case:

1. In the Home window, click  in the upper left corner of the window.
2. Select **VetMedStat**. A web browser displays the website for IDEXX Telemedicine Consultants.

## Importing Cases Submitted Outside the IDEXX-PACS\* Software

If you submit a case to IDEXX Telemedicine Consultants outside of the IDEXX-PACS\* software, the information is still communicated to the IDEXX-PACS software, which attempts to match the submission status and any resulting reports to the proper patient.

But if the status or report does not show up automatically, follow the steps below to manually assign the telemedicine submission to the patient.

### To assign a telemedicine submission to a patient:

1. From the Home window, click **Connections**.
2. On the Telemedicine row, click **Queue**. The Telemedicine Queue window opens and displays all telemedicine submissions.
3. If the case is not in the list:
  - a. Click **Import Missing Case**.
  - b. Select VetMedStat, and enter the case ID.
  - c. Click **Import Missing Case**. The case is added to the list of cases in the Telemedicine Queue window.
4. Click **Assign**. The Select Client and Patient window opens.
5. Type the patient's name or ID in the text box and click **Search**.
6. Select the patient and click **Select**. A case containing this submission is created for this patient.
7. Click **Close**.

## Viewing a List of All Telemedicine Cases

### To view a list of all telemedicine cases:

1. In the Home window, click **Connections**.
2. On the Telemedicine row, click **Queue**.

The Cases tab of the Telemedicine Queue window lists telemedicine submissions. The File Upload tab lists files that have been uploaded to the telemedicine provider.

3. To see case details, click a case name and click **View Case**.

# Customer Support and Software Upgrades

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## Contacting IDEXX

In the U.S. or Canada:

- IDEXX Diagnostic Imaging Customer Support: 1-877-433-9948
- General sales information: 1-888-622-1962

In Europe: 00800 1234 3399

## Upgrading Software with IDEXX SmartService\* Solutions

If you have IDEXX SmartService\* Solutions, you will be alerted when a new software upgrade is available. You can upgrade immediately over your network without using software CDs.

Upgrading usually takes 30–45 minutes on each computer, not including the time needed to back up your database and images.

### Before you begin:

Follow your usual image storage or backup process to be sure you have a backup copy of your database and images.

### Important information if you have an IDEXX Diagnostic Imaging network:

- Upgrade the server software first. The server stores the database and image files. If you have a backup drive, it is usually connected to the server. You must finish upgrading the server, including step 5 in the following procedure, before you can use the software on any other computer.
- If your server is not used for capturing radiographs, update the radiograph-capture computer next, so that you can get back to capturing images quickly.
- After the server and capture computers are upgraded, upgrade all other computers on your network. The other computers will not run the software until they have been upgraded.

### To upgrade:

1. Close all other programs before upgrading the IDEXX Diagnostic Imaging software.
2. Double-click the red-and-yellow SQL  icon in the lower right corner of your desktop, and then click **Exit** or **Shutdown**.
3. Do one of the following:
  - On the window that tells you the upgrade is available, click **Upgrade Now**.
  - In the Home window, click , and then click **Install Updates**.
4. Follow the instructions in the installation window, and restart your computer when the installation is complete.
5. Double-click the IDEXX Diagnostic Imaging icon on the desktop to restart the software. You may need to wait a minute or two for the software to open the first time.

6. Follow the on-screen instructions to update the database and complete the upgrade process. This will take a few minutes.

# Glossary

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## Annotation

Explanatory notes or shapes that a user can add to an image using the tools found in the Annotation drop-down toolbar on the Image Viewer window.

## Archiving

The process of moving images to another location, such as a CD or a portable hard disk. Generally, archiving is done to make room on the hard disk by removing images that are unlikely to be used, such as older images. Unlike backing up, which makes copies of images, archiving removes the primary image files from the IDEXX-PACS\* Imaging Software. Archived images can be brought back into the program if needed.

## Authorization Code (Activation Key)

A code you must enter when you start the IDEXX-PACS software for the first time after installation. Call IDEXX Diagnostic Imaging Customer Support at 1-877-433-9948 to receive your authorization code and clinic ID. You will need to provide the registration code that appears in the Register window at startup.

## Backing Up

The process of making a copy of images and database information in another location, such as a tape drive or portable hard disk. If the computer is damaged, or if the information on the computer is damaged, the images and information can be restored from the backup copy. Unlike archiving, backing up does not remove any images from the computer; it just creates extra copies for safety.

## Bit

The basic building block of binary data, a bit is used to store information. The more bits per pixel per color type (RGB or grayscale), the greater the detail of the image.

## Bucky Tray

A shallow tray under the x-ray table that holds the detector plate or cassette.

## Cases

A collection of patient images, comments, and medical history you can send to a consultant.

## Capture Station

A workstation or mobile computer where radiographs are captured.

## Compression

The process of condensing images for the purpose of saving space and decreasing transfer times when transmitting images via the Internet.

**DICOM®**

An acronym for “Digital Imaging and Communications in Medicine,” a standard method for transferring images and associated information between devices created by different manufacturers.

**Image**

A graphical “picture,” such as a radiograph.

**Image Record**

The information about an image, including a thumbnail view of the image, the image title, the type of image, the source of the image, the responsible staff member, comments about the image, compression information, bit depth, and status.

**Network**

A group of computers connected together to share resources and work more efficiently.

**Overlays**

Information about the image that can be displayed in the Image Viewer, such as patient name, date of birth, series title, and modality. Much of the same information is also contained in a DICOM file created for the image.

**PACS**

An acronym for “picture archiving and communications system.”

**Pixels**

Small bits of data that make up an image.

**Server**

The computer that contains the IDEXX-PACS software database and copies of all the images.

**SOAP**

An acronym for “subjective data, objective data, assessment, and plan.” SOAP is the way that progress notes are organized in problem-oriented medical record keeping.

**Thumbnail**

A miniature view of an image in the patient’s image record and case.

**TWAIN**

A standard protocol and application programming interface that enables software applications to communicate with imaging devices (such as scanners and cameras). Applications that support TWAIN have a standard method for acquiring images.

**Workstation**

Computer connected to the IDEXX-PACS server. When images or related information is accessed on a workstation, the workstation contacts the IDEXX-PACS server to get the images and information.