

McKesson Information Solutions



# Horizon Rad Station 11.0 Distributed User's Guide



**MCKESSON**  
Empowering Healthcare

# Horizon Medical Imaging™



Horizon Rad Station Distributed  
User's Guide

Release 11.0  
January 2006

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Revision 3

**MCKESSON**  
*Empowering Healthcare*

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# About this document

This section provides information to help you understand the *Horizon Rad Station Distributed User's Guide* and how to most effectively use it.

## Purpose

This document describes the Horizon Rad Station Distributed application and how to use it.

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**Note:** Unless otherwise specified, Horizon Rad Station Distributed is referred to in this document as Horizon Rad Station.

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## Audience

This document is written for the Horizon Rad Station users who will view and analyze diagnostic medical images.

Typically, the users are:

- Technologists
- Radiologists
- Radiology Residents
- Referring Physicians
- Emergency Room (ER) Staff
- Intensive Care Unit (ICU) Staff

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**Note:** The document does not describe how to use the medical equipment in your facility, or perform medical diagnostic examinations. For this information refer to the relevant manufacturer's manual and internal standard operating procedures

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## Organization

This document contains the following major sections:

- **“Getting started”** describes how to start using Horizon Rad Station. The section includes an overview of the system and describes a typical workflow.
- **“Displaying the In-Box and Folder Finder”** describes how to display the In-Box and Folder Finder, which are used to open a study.
- **“Finding, opening, and comparing studies”** describes how to find, open, and compare patient studies.
- **“Working with series”** describes how to display and view series.
- **“Working with images”** describes how to manipulate images within a study.
- **“Working with cine clips”** describes how to manipulate cine clips within a study.

- **“Working with display protocols”** describes how to use and manage display protocols.
- **“Viewing patient information and documents”** describes how to access and view patient and study information, and documents that are related to the study or the associated patient.
- **“Setting the Horizon Rad Station preferences”** describes how to set preferences for Horizon Rad Station.
- **“Changing study status and closing studies”** describes how to change study status and close studies.
- **“Horizon Rad Station work area”** describes the Horizon Rad Station work area.
- **“Using shortcuts”** describes the shortcuts in Horizon Rad Station.
- **“Accessing Horizon Rad Station through an EMR application”** describes the Horizon Rad Station EMR Integration option and how to use it.
- **“Troubleshooting”** contains troubleshooting tips for using Horizon Rad Station.
- **“Glossary”** contains a list of terms and abbreviations used in this document.
- **“Index”** lists the most important concepts described in this document.

## Related documentation

The complete Horizon Rad Station User Documentation Set consists of the following:

- *Horizon Rad Station Distributed User’s Guide*
- *Horizon Rad Station Customer Release Notes*
- *Horizon Rad Station Service Pack Notes*
- *Horizon Rad Station Distributed Icon Card*

The following documents are not part of the Horizon Rad Station User Documentation Set but contain information related to the product:

- Horizon Medical Imaging™ User Documentation Set

## Intended Use for Horizon Rad Station

Terminology used in this intended use statement is consistent with the American College of Radiology (ACR) standards for Digital Data Management and Teleradiology.

This product is suitable for official interpretation of diagnostic images where the interpreting physician is of the opinion that the display system is compliant to the ACR standards and where the image data is losslessly compressed. The display system consists of monitor(s) and display card(s).

## Prescription device statement

United States law restricts this device to sale by or on the order of a physician or a properly licensed practitioner.

## Your comments

We welcome your comments about the usability of the McKesson equipment and accompanying manuals. If you have questions or comments regarding this document, please contact the Product Documentation Group at McKesson Medical Imaging Group.

## Service information

For technical support or any service related to McKesson equipment, please call the toll-free telephone number listed on the front or back of this guide.

Standard Coverage includes:

- **Software Support**

Software support for 24 hours per day, seven days per week for all Emergency Software Support. "Emergency Software Support" means service issues related to system failure affecting the delivery of patient care. Non-emergency software support is limited to 6:00 A.M. to 6:00 P.M. Pacific Standard Time, five days per week (Monday to Friday).

- **Hardware Support**

Hardware Equipment support through third-party vendors (for example, Hewlett Packard) is provided nine hours per day (8:00 A.M. to 5:00 P.M. local time), five days per week (Monday through Friday) with a four hour response time (four hour response does not apply to evenings, weekends, and statutory holidays). Parts are included at no additional cost to Customer. Hardware Equipment support outside the standard hours is billable at McKesson's current time and materials billing rates.

- **Software Updates**

McKesson will provide Software Updates delivered remotely, online to the currently licensed feature set within Customer's licensed version of the McKesson Horizon Medical Imaging Software, for example, Version 4.1 to 4.3 to 4.5. Hardware equipment, labor and, travel expenses associated with on-site Software Updates are not included under a Maintenance Support agreement.

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**Note:** Glassware (Monitor Picture Tubes), including color liquid crystal displays, are only covered under full coverage maintenance for either the first one or three years following the original installation date, depending on the model type purchased. See your service contract for details.

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If you do call McKesson Medical Imaging Group for service, please have this manual handy and be prepared to provide the following information:

- Your name and the name of the facility from which you are calling
- Your return telephone, fax, or pager number
- The system or equipment name on the McKesson label
- A description of the steps leading to the problem



# Chapter 1 - Getting started

This section provides a brief overview of Horizon Rad Station.

## In this section

This section contains the following topics:

Topic	See Page
What is Horizon Rad Station	2
Installing Horizon Rad Station	5
Updating Horizon Rad Station	8
Starting and Exiting Horizon Rad Station	9
Supported monitor configurations	11
System requirements for Horizon Rad Station	12
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## What is Horizon Rad Station

Horizon Rad Station is a multi-modality image viewer for viewing grayscale diagnostic DICOM medical images.

**Note:** Horizon Rad Station supports any modality listed in the standard DICOM conformance statement. Depending on the site configuration, some modalities may not be supported at your site. For details, contact McKesson Medical Imaging Group.

### Versions of Horizon Rad Station

The following table briefly describes two versions of Horizon Rad Station:

Version	Description
Horizon Rad Station Advanced	<p>Accessed from dedicated workstations located at your site. It enables you to:</p> <ul style="list-style-type: none"> <li>• View and manipulate images and studies.</li> <li>• View and manage patients and studies.</li> <li>• View and create patient documentation.</li> <li>• Launch other applications.</li> </ul> <p><b>Note:</b> You can save the changes you make to images. These changes are applied whenever the study is viewed.</p>
Horizon Rad Station Distributed	<p>Accessed remotely through a Web browser, from any personal computer that is connected to the Internet. It enables you to:</p> <ul style="list-style-type: none"> <li>• View and manipulate images and studies. See “Working with images” on page 73 and “Working with series” on page 43.</li> <li>• View patient and study information. See “Viewing patient and study information” on page 201.</li> <li>• View patient documentation. See “Viewing patient documentation” on page 205.</li> </ul> <p><b>Note:</b> You can make temporary changes to images while you are reviewing a study. These changes cannot be saved.</p>

This document describes Horizon Rad Station Distributed (referred to hereafter as Horizon Rad Station). For details on Horizon Rad Station Advanced, refer to the *Horizon Rad Station Advanced User’s Guide*.

### Horizon Rad Station Distributed implementation options

Horizon Rad Station Distributed can be used as a single application, or together with an Electronic Medical Record (EMR) application.

The following table briefly describes the two implementation options:

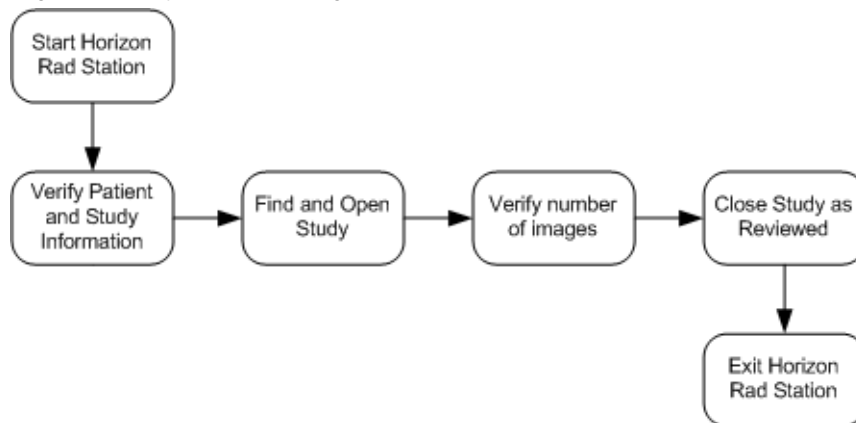
Implementation option	Description
Horizon Rad Station Distributed	<p>Enables you to review study images, patient and study information, and patient documentation. Horizon Rad Station is started directly from a logon page displayed in a Web browser.</p> <p>Studies are opened from the <a href="#">Study list</a> once the user is logged on. See <a href="#">“Starting and Exiting Horizon Rad Station”</a> on page 9.</p>
Horizon Rad Station Distributed (EMR Integration)	<p>Enables you to view study images in Horizon Rad Station accessed from an EMR application. The user logs on to the EMR application, and then starts Horizon Rad Station from a patient record that is currently displayed. See <a href="#">“Accessing Horizon Rad Station through an EMR application”</a> on page 397.</p> <p>In the EMR implementation, Horizon Rad Station cannot be used to open studies or access patient information or documentation.</p>

**Note:** Your site needs to be configured specifically to use either of these options. For details, contact McKesson Medical Imaging.

## Overview of a typical workflow

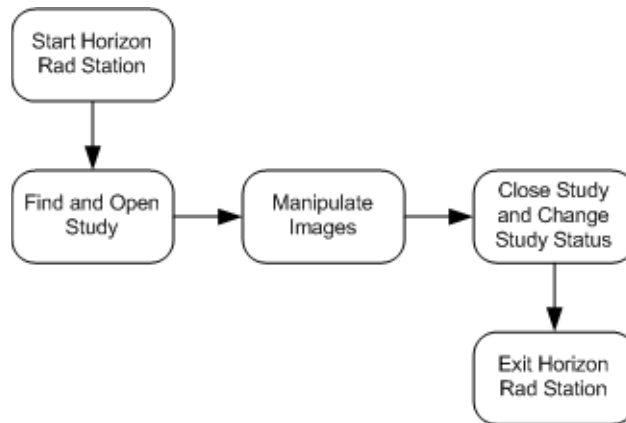
*Figure 1-1* provides a visual overview of a typical Technologist workflow in Horizon Rad Station.

*Figure 1-1 A typical Technologist workflow in Horizon Rad Station*



*Figure 1-2* provides a visual overview of a typical Radiologist workflow in Horizon Rad Station.

Figure 1-2 A typical Radiologist workflow in Horizon Rad Station



## Installing Horizon Rad Station

This section describes how to install Horizon Rad Station on your computer.

### Before you install Horizon Rad Station

Before you install Horizon Rad Station on your computer, verify the following:

- Your Horizon Rad Station user name is assigned to the Microsoft® Windows® **Power Users group** or the role of Administrator
- You have obtained the Uniform Resource Locator (URL) from your local system administrator

---

**Note:** The URL is an Internet address that specifies the location of the Horizon Rad Station installation software.

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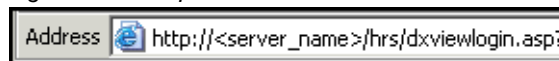
- The computer is connected to the Horizon Rad Station Web server which provides access to the Horizon Rad Station installation software
- Microsoft® Internet Explorer is installed on the computer

### Steps for this task

To install Horizon Rad Station:

- 1 Open Microsoft® Internet Explorer.
- 2 On the Address bar, complete the following steps:
  - In the **Address** box, type the Uniform Resource Locator (URL) provided by your system administrator.

Figure 1-3 Sample URL



- Click the **Go** icon or press ENTER.



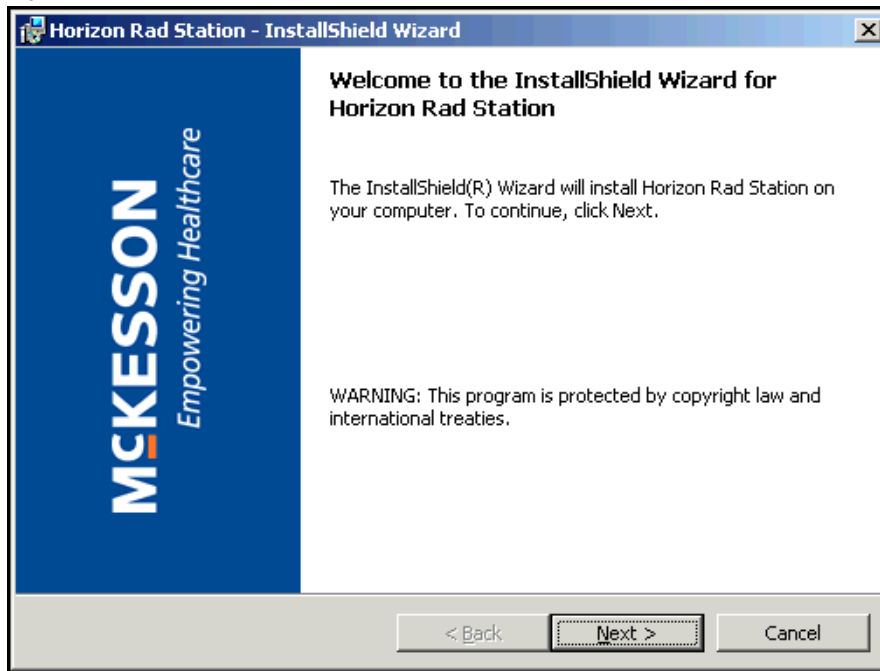
The Horizon Rad Station InstallShield Wizard is launched. See *Figure 1-4*.

---

**Note:** If an error message is displayed, review the message, and then take the appropriate action. See "**Troubleshooting installing Horizon Rad Station**" on page 386.

---

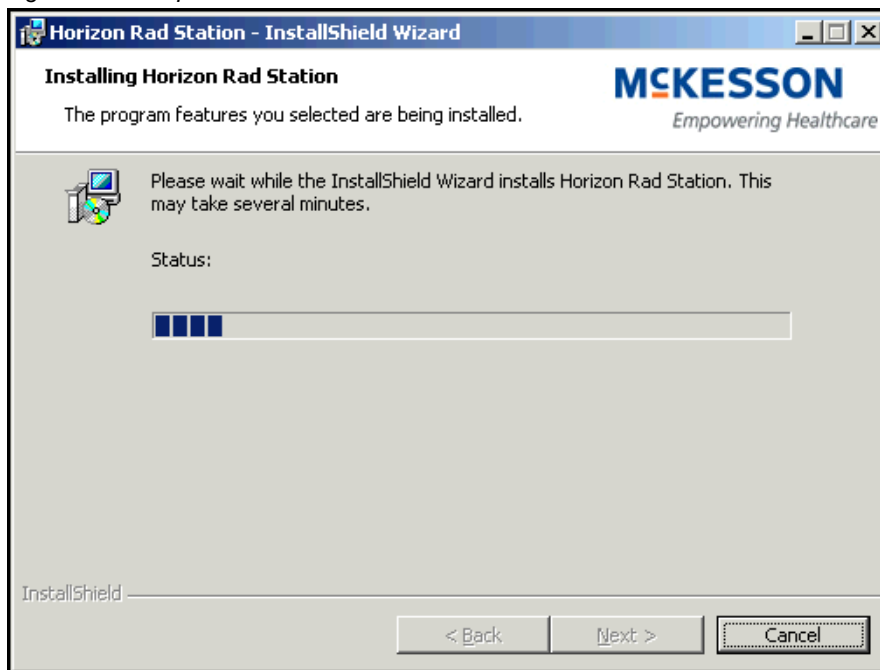
Figure 1-4 Horizon Rad Station InstallShield Wizard Welcome window



- 3 Click **Next**.

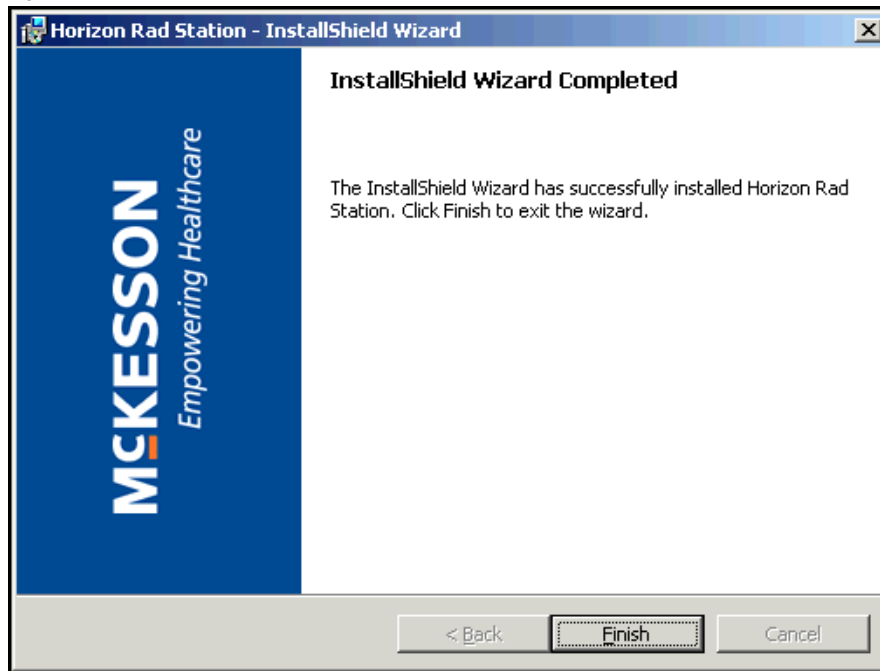
The Setup Status window is displayed, indicating the installation progress. See [Figure 1-5](#).

Figure 1-5 Setup Status window



When the installation is complete, the InstallShield Wizard Completed window is displayed.

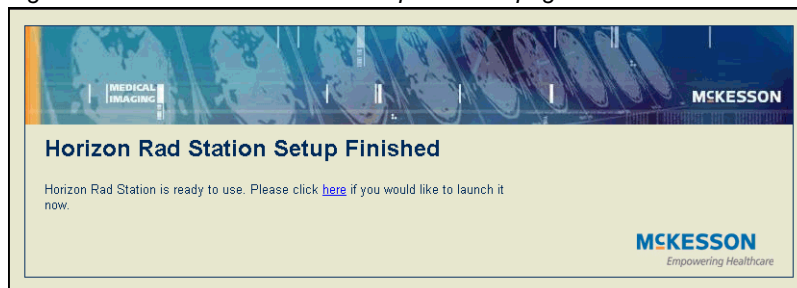
Figure 1-6 Installation Complete window



- 4 Click **Finish**.

The Horizon Rad Station Setup Finished page is displayed.

Figure 1-7 Horizon Rad Station Setup Finished page



- 5 Click the link (**here**) to start Horizon Rad Station.

Horizon Rad Station is ready to use. Please click [here](#) if you would like to launch it now.

- 6 To launch Horizon Rad Station, see “Starting and Exiting Horizon Rad Station” on page 9.

## Updating Horizon Rad Station

You may be required to install Horizon Rad Station updates on your computer as they become available. When you start Horizon Rad Station, a message is displayed informing you that an update is available and is being transferred to your computer.

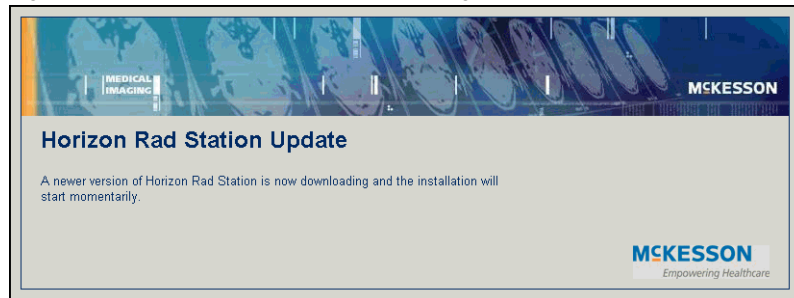
### Steps for this task

To update Horizon Rad Station:

- 1 Start Horizon Rad Station. See “Starting and Exiting Horizon Rad Station” on page 9 or “Opening studies from the EMR application” on page 403.

The Horizon Rad Station Update page is displayed informing you that an update is being transferred to your computer. See *Figure 1-8*.

*Figure 1-8 Horizon Rad Station Update page*



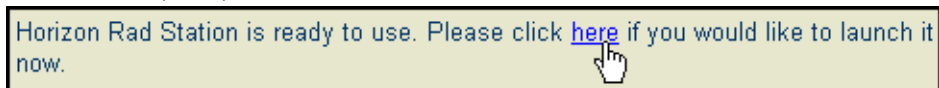
The InstallShield Wizard is started and the Welcome window is displayed. See *Figure 1-4*.

- 2 Click **Next**.

The Setup Status window is displayed, indicating the installation progress. See *Figure 1-5*.

- 3 Click **Finish**. The Horizon Rad Station Setup Finished page is displayed. See *Figure 1-7*.

- 4 Click the link (**here**) to start Horizon Rad Station.



The Horizon Rad Station Login page is displayed. See *Figure 1-9* on page 9.

- 5 To log on to Horizon Rad Station, see “Starting and Exiting Horizon Rad Station” on page 9.



## Starting and Exiting Horizon Rad Station

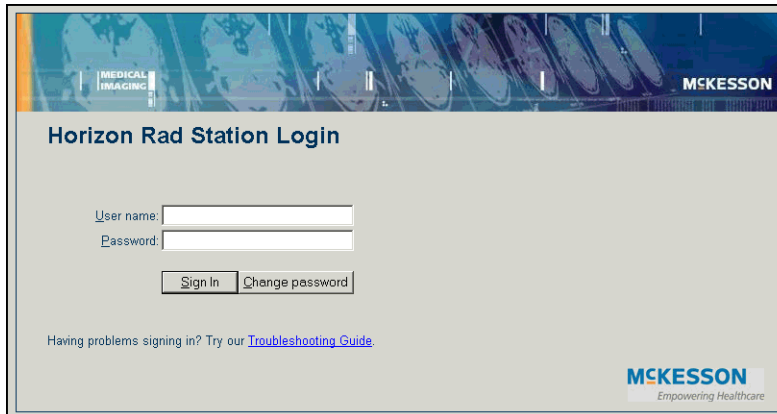
This section describes how to start and exit Horizon Rad Station.

### Starting Horizon Rad Station

- 1 Open Microsoft® Internet Explorer.
- 2 On the Address bar, complete the following steps:
  - In the **Address** box, type the Uniform Resource Locator (URL) provided by your system administrator.
  - Click the **Go** icon or press ENTER.

The Horizon Rad Station Login page is displayed.

Figure 1-9 Horizon Rad Station Login page



- 3 In the **User Name** box, type your Horizon Rad Station user name.
- 4 In the **Password** box, type your Horizon Rad Station password.
- 5 Click **OK**.

---

**Note:** If the Horizon Rad Station Change your password page is displayed instead, review the error message, and then take the appropriate action. See [“Troubleshooting starting Horizon Rad Station”](#) on page 387.

---

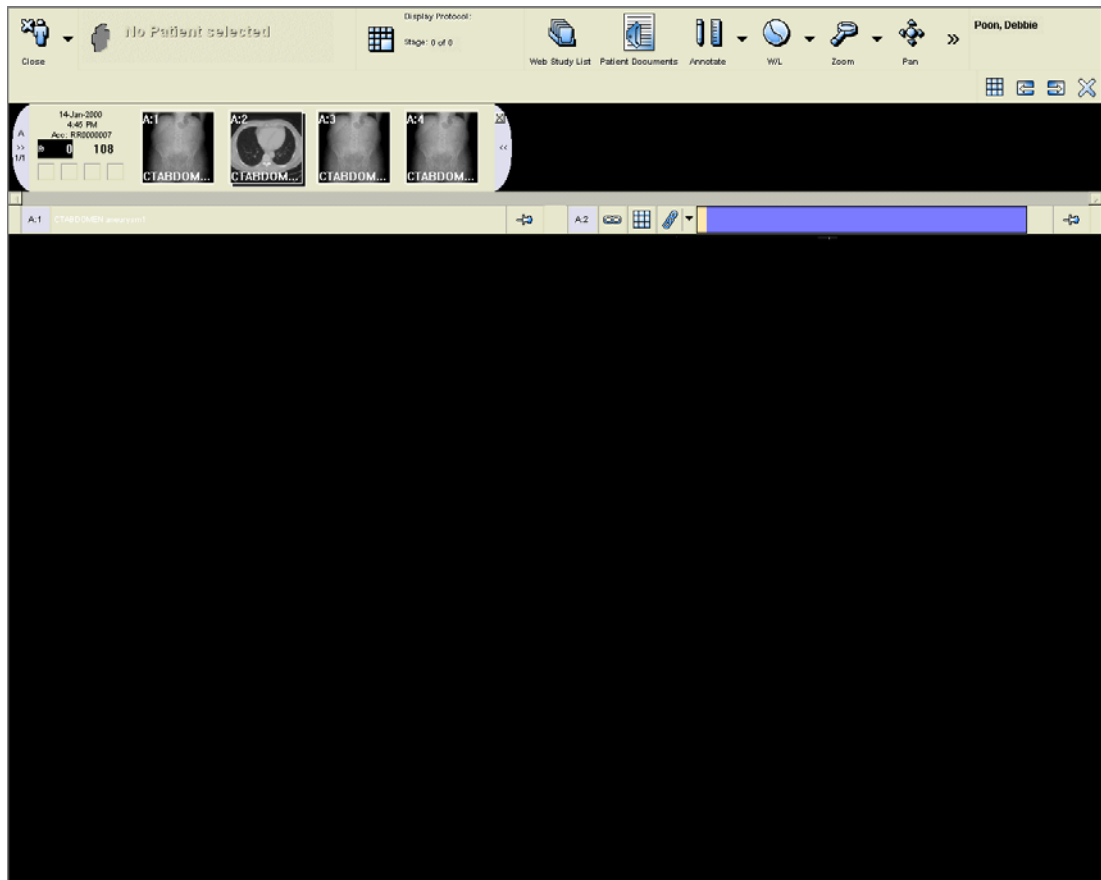
Horizon Rad Station is started.

---

**Note:** If an error message is displayed, review the message, and then take the appropriate action. See [“Troubleshooting starting Horizon Rad Station”](#) on page 387.

---

Figure 1-10 Horizon Rad Station is launched



## Exiting Horizon Rad Station

To exit Horizon Rad Station:

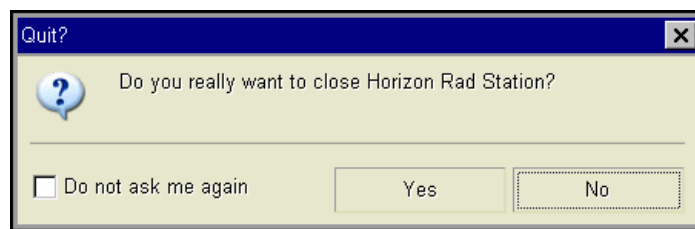
- 1 Click the logged-on user name, at the top right corner of the **work area**.
- 2 Click **Quit**.

Alternatively, instead of steps 1-2, click the **Quit** icon on the main toolbar.



- 3 If the quit confirmation message is displayed, click **Yes**.

Figure 1-11 Quit confirmation message



## Supported monitor configurations

Horizon Rad Station supports two monitor configurations:

- Single monitor configuration
- Dual monitor configuration

### Single monitor configuration

A single monitor configuration consists of one 1280x1024 or 1600x1200 resolution color monitor in 24 or 32 bit color mode.

### Dual monitor configuration

A dual monitor configuration consists of two 1280x1024 or 1600x1200 resolution color monitors in 24 or 32 bit color mode.

## System requirements for Horizon Rad Station

This section describes the system requirements for Horizon Rad Station.

### Network requirements

The minimum network speed requirements is:

- Broadband (Cable or ADSL)

### Display and hardware requirements

The Horizon Rad Station computer must meet the minimum requirements specified in this section. Recommendations to achieve optimal performance are also listed.

The following table describes the minimum and recommended system requirements.

Item	Minimum requirement	Recommended requirement
Display	1280x1024 resolution in 24 or 32 bit color mode	1600x1200 resolution in 32 bit color mode
CPU	Pentium III 1 GHz	Pentium IV 2.6 GHz or higher
RAM	512 MB <hr/> <b>Note:</b> 1 GB of RAM for a dual monitor configuration <hr/>	1 GB or higher
Free disk space	2 GB	4 GB
Mouse	Mouse wheel	Mouse wheel

---

## Software requirements for Horizon Rad Station

To use Horizon Rad Station, you need to have certain software installed on the Horizon Rad Station computer.

The following table describes the software requirements:

Software	Version
Web browser	<ul style="list-style-type: none"><li>Microsoft® Internet Explorer 6 or later</li></ul>
Operating system	<ul style="list-style-type: none"><li>Windows® XP Home and Professional</li></ul> <p>- or -</p> <ul style="list-style-type: none"><li>Windows® 2000 Professional (Service Pack 4)</li></ul>



## Chapter 2 - Displaying the In-Box and Folder Finder

This section describes how to display the **In-Box** and **Folder Finder**, which are used to open studies.

---

**Note:** If Horizon Rad Station is integrated with an **EMR application**, the In-Box and Folder Finder are not available.

---

### In this section

This section contains the following topics:

Topic	See Page
Displaying the In-Box	16
Displaying the Folder Finder	20
Managing the Study list	23



---

## Displaying the In-Box

This section describes how to display the [In-Box](#).

---

**Note:** If Horizon Rad Station is integrated with an [EMR application](#), the In-Box is not available.

---

### In this section

This section contains the following topics:

Topic	See Page
<a href="#">Understanding the In-Box</a>	16
<a href="#">Steps for displaying the In-Box</a>	19

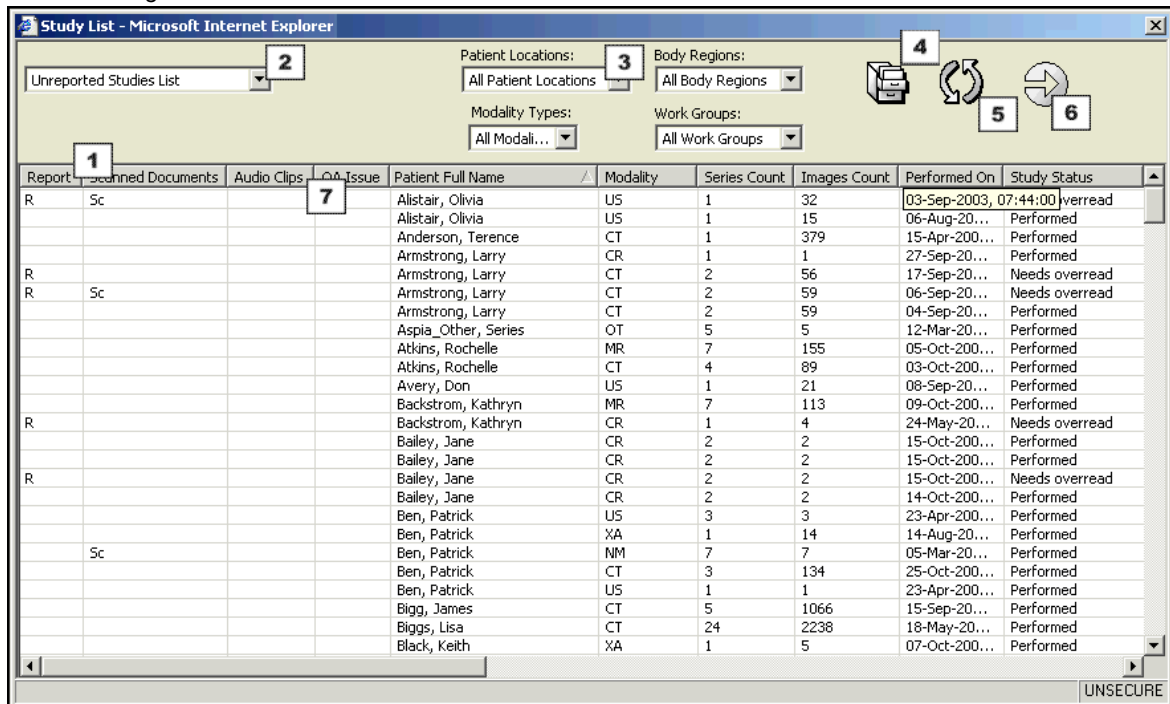
## Understanding the In-Box

The [In-Box](#) enables you to list and open the following types of studies:

- Recently performed studies, whose status was changed to [Performed](#) within a specific time period
- Unreported studies (studies with the status of [In-Progress](#), [Performed](#), [Reviewed](#), and [Needs Over-Read](#))
- Recently reported studies, whose status was changed to [Dictated](#) or [Reported](#) within a specific time period
- Needs Over-Read studies
- Dictated studies
- [Transcribed](#) studies

For details on study statuses, see "[Glossary](#)" on page 411.


Figure 2-1 In-Box

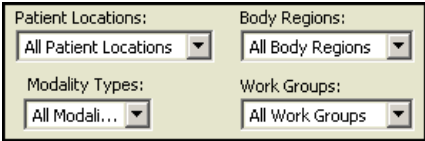





To display the In-Box, see “Steps for displaying the In-Box” on page 19.

## Components of the In-Box

The following table lists the In-Box components.

Component	Meaning
<p>1. Study list</p>	<p>Display a list of studies. The Study list is arranged into columns. Each column contains a piece of study information. You can:</p> <ul style="list-style-type: none"> <li>Sort the list</li> <li>Adjust the column width</li> <li>Arrange the column order</li> </ul> <p>See “Managing the Study list” on page 23.</p>
<p>2. Study list menu</p> 	<p>Switch to a different Study list, to list any of the following types of studies:</p> <ul style="list-style-type: none"> <li>Recently Reported Studies</li> <li>Recently Performed Studies</li> <li>Unreported Studies List</li> </ul> <p>See “Glossary” on page 411.</p>

Component	Meaning (Continued)												
<p>3. <b>Filters</b></p> 	<p>Apply a filter to the Study list. Studies that match this filter are listed. For example, you can list studies according to a certain <b>patient location, modality type, body region, or work group</b>.</p> <p>See “Refining searches” on page 34.</p>												
<p>4. <b>Folder Finder</b> icon</p> 	<p>Display the Folder Finder.</p> <p>See “Displaying the Folder Finder” on page 20.</p>												
<p>5. <b>Refresh</b> icon</p> 	<p>Refresh the Study list.</p>												
<p>6. <b>Close</b> icon</p> 	<p>Close the In-Box.</p>												
<p>7. <b>Patient Documents</b> columns</p> <table border="1"> <thead> <tr> <th>Report</th> <th>Scanned Documents</th> <th>Audio Clips</th> <th>QA Issue</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td>Q</td> </tr> <tr> <td>R</td> <td></td> <td>A</td> <td>Q</td> </tr> </tbody> </table>	Report	Scanned Documents	Audio Clips	QA Issue				Q	R		A	Q	<p>Display the Patient Portfolio to view reports, scanned documents, and audio clips. See “Finding and opening studies containing patient documents from the Study list” on page 199.</p>
Report	Scanned Documents	Audio Clips	QA Issue										
			Q										
R		A	Q										

## Steps for displaying the In-Box

The In-Box can be displayed automatically and manually. For the In-Box description, see [“Understanding the In-Box”](#) on page 16.

### Automatically displaying the In-Box

The [Study list](#) is displayed automatically when you start Horizon Rad Station, in either the In-Box or Folder Finder. If the In-Box was displayed during the previous session, it is displayed by default.

### Manually displaying the In-Box

To manually display the In-Box:

- Click the **Study List** icon on the toolbar.



Alternatively, if the [Folder Finder](#) is displayed, click the **In-Box** icon on the Folder Finder.



## Displaying the Folder Finder

This section describes how to display the [Folder Finder](#).

**Note:** If Horizon Rad Station is integrated with an [EMR application](#), the Folder Finder is not available.

### In this section

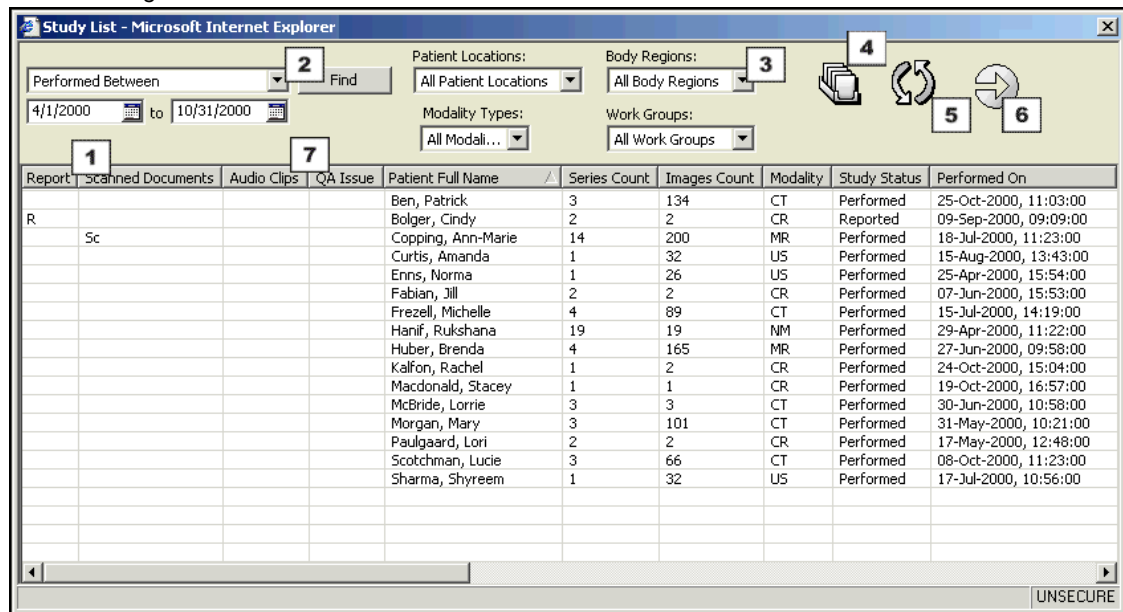
This section contains the following topics:

Topic	See Page
<a href="#">Understanding the Folder Finder</a>	20
<a href="#">Steps for displaying the Folder Finder</a>	22

## Understanding the Folder Finder

The [Folder Finder](#) enables you to find and open studies of all study statuses except [Scheduled studies](#). For details on study statuses, see [“Glossary”](#) on page 411.

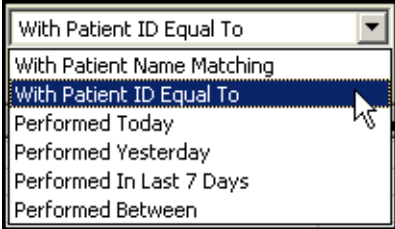
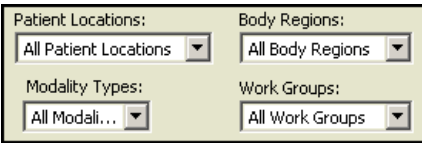



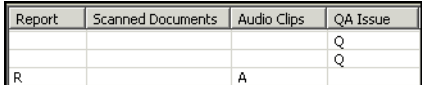
Figure 2-2 Folder Finder



To display the Folder Finder, see [“Steps for displaying the Folder Finder”](#) on page 22.

## Components of the Folder Finder

The following table lists the components of the Folder Finder.

Component	Meaning
1. <b>Study list</b>	Display information about patient studies. You can choose which columns to display on the screen.  See “Managing the Study list” on page 23.
2. <b>Search criteria</b> 	Select the criterion that defines which studies to list in the Study list. For example, you can list the studies that match a specific patient ID.  See “Using search criteria to find an open studies” on page 30.
3. <b>Filters</b> 	Select filter values to limit the scope of studies listed. For example, you can list studies according to a certain patient location, modality type, body region, or work group.  See “Working with filters” on page 33.
4. <b>In-Box icon</b> 	Display the In-Box. See “Steps for displaying the In-Box” on page 19.
5. <b>Refresh icon</b> 	Refresh the Study list.
6. <b>Close icon</b> 	Close the Folder Finder.
7. <b>Patient Documents columns</b> 	Display the Patient Portfolio to view reports, scanned documents, and audio clips. See “Viewing patient information and documents” on page 195.

## Steps for displaying the Folder Finder

The **Folder Finder** can be displayed automatically and manually.

### Automatically displaying the Folder Finder

The **Study list** is displayed automatically when you start Horizon Rad Station, in either the In-Box or Folder Finder. If the Folder Finder was displayed during the previous session, it is displayed by default.

### Manually displaying the Folder Finder

To display the Folder Finder manually:

- Click the **Study List** icon on the toolbar.



Alternatively, if the In-Box is displayed, click the **Folder Finder** icon on the In-Box.



The Folder Finder is displayed. See *Figure 2-2*.

## Managing the Study list

You can manage the Study list by:

- [Sorting the Study list](#)
- [Adjusting the column width](#)
- [Arranging the order of the columns](#)

**Note:** If Horizon Rad Station is integrated with an [EMR application](#), the Study list is not available.

### Sorting the Study list

To sort the Study list:

- 1 Click the column header of the column by which you want to sort.

Figure 2-3 Sorting the Study list by patient's full name

Patient Full Name	Modality	Images Count
Daniels, Heather	MR	57
Blair, Stephen	CT	55
Crow, Patricia	CR	4
Ali, Raveena	MR	251
Bayswater, Frank	CT	17
Devlin, Silvia	CT	56

An arrow is displayed to the right of the column header. An UP ARROW indicates an ascending order (A-Z), and a DOWN ARROW indicates a descending order (Z-A).

Figure 2-4 Study list, sorted by Full Name, in ascending order

Patient Full Name	Modality	Images Count
Ali, Raveena	MR	251
Bayswater, Frank	CT	17
Blair, Stephen	CT	55
Crow, Patricia	CR	4
Daniels, Heather	MR	57
Devlin, Silvia	CT	56

- 2 To reverse the sort order, click the column header again.

### Adjusting the column width

To adjust the column width:

- 1 Point to the edge of the column header. The cursor changes to a double-headed arrow.

Figure 2-5 Adjusting the column width

Patient Full Name	Patient ID
Benitez, Bonita-Grace	1049328839
Bolger, Cindy	1049323135
Copping, Ann-Marie	1049325439

- 2 Drag the cursor to adjust the column width.

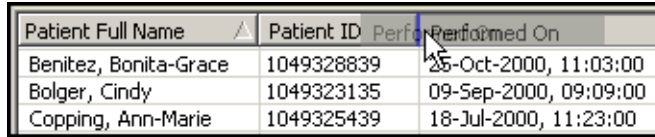


## Arranging the column order

To arrange the column order:

- Click the header of the column that you want to move, and then drag it horizontally, to a new position in the list.

*Figure 2-6 Arranging the column position*



Patient Full Name	Patient ID	Performed On
Benitez, Bonita-Grace	1049328839	25-Oct-2000, 11:03:00
Bolger, Cindy	1049323135	09-Sep-2000, 09:09:00
Copping, Ann-Marie	1049325439	18-Jul-2000, 11:23:00

## Chapter 3 - Finding, opening, and comparing studies

This section describes how to find, open, and compare patient studies.

### In this section

This section contains the following topics:

Topic	See Page
Finding and opening studies in the In-Box	26
Finding and opening studies in the Folder Finder	29
Working with filters	33
Opening additional studies for the same patient	36
Switching between open studies for different patients	39
Viewing studies containing QA issues	40

## Finding and opening studies in the In-Box

This section describes how to use the In-Box to find and open studies.

**Note:** If Horizon Rad Station is integrated with an EMR application, the In-Box is not available. To open a study from an EMR application, see “Opening studies from the EMR application” on page 403.

### In this section

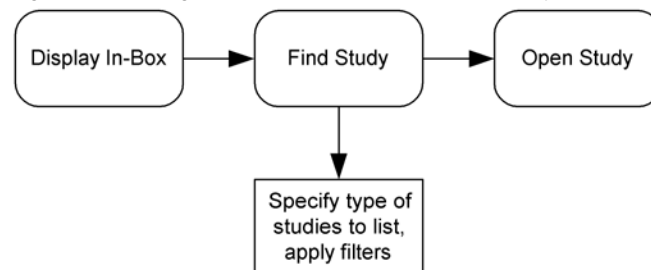
This section contains the following topics:

Topic	See Page
Overview of finding and opening studies using the In-Box	26
Finding and opening studies using the In-Box	27

## Overview of finding and opening studies using the In-Box

Figure 3-1 provides a visual overview of using the In-Box to find and open a study.

Figure 3-1 Using the In-Box to find an open a study



### When to use the In-Box to find and open studies

Use the In-Box to find and open the following types of studies. For details on the study statuses, see the “Glossary” on page 411.

- Recently reported studies, whose status was changed to **Dictated** or **Reported** within a specific time period
- Recently performed studies, whose status was changed to **Performed** within a specific time period
- Unreported studies (studies with the status of **In-progress**, **Performed**, **Reviewed**, and **Needs Over-Read**)

## Finding and opening studies using the In-Box

The In-Box enables you to find and open studies in various Study list modes.

### Steps for this task

To find and open a study:

- 1 Click the **Study List** icon on the toolbar to display the In-Box.



For other ways to display the In-Box, see “Steps for displaying the In-Box” on page 19.

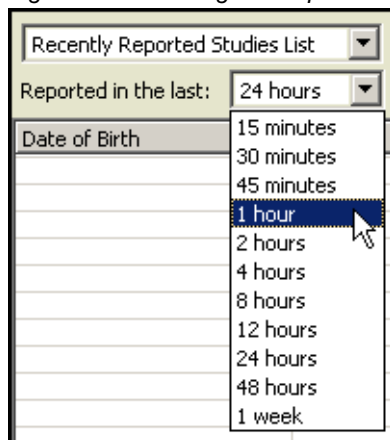
- 2 Click the arrow beside the **Study list mode** box, and then select a Study list mode. See “Study list modes” on page 28.

Figure 3-2 Selecting a Study list mode



- 3 If you select **Recently Reported Studies List** or **Recently Performed Studies List** in step 2, click the arrow beside **Reported in the last** box, and then select a time period.

Figure 3-3 Selecting a time period



The relevant Study list is displayed.

- 4 To narrow your search, click a filter box, and then select a filter of your choice. To further refine your search, repeat this step and select an additional filter. For details, see “Refining searches” on page 34.

The filtered Study list is displayed.

- 5 Double-click the study you want to open.

## Study list modes

The following table describes the Study list modes:

Study list mode	Description
Recently Reported Studies list	Lists studies assigned the following status, within a specific time period: <ul style="list-style-type: none"> <li>• Transcribed</li> <li>• Dictated</li> <li>• Reported</li> </ul>
Recently Performed Studies list	Lists studies assigned the following status, within a specific time period: <ul style="list-style-type: none"> <li>• Performed</li> <li>• Reported</li> <li>• Reviewed</li> <li>• Needs Over-Read</li> </ul>
Unreported Studies list	Lists the studies whose status is assigned the following: <ul style="list-style-type: none"> <li>• In-progress</li> <li>• Performed</li> <li>• Reviewed</li> <li>• Needs Over-Read</li> </ul>

For details on study statuses, see “Glossary” on page 411.

## Finding and opening studies in the Folder Finder

This section describes how to use the Folder Finder to find and open studies, regardless of their status.

**Note:** If Horizon Rad Station is integrated with an EMR application, the Folder Finder is not available. To open a study from an EMR application, see “Opening studies from the EMR application” on page 403.

### In this section

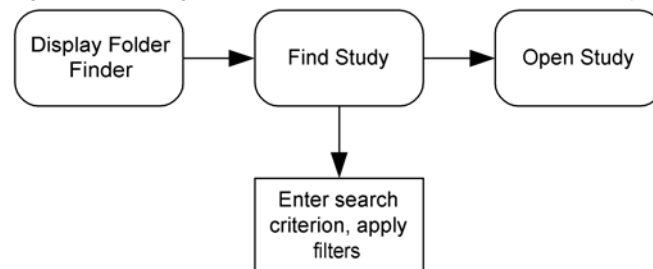
This section contains the following topics:

Topic	See Page
Overview of finding and opening studies using the Folder Finder	29
Using search criteria to find an open studies	30

## Overview of finding and opening studies using the Folder Finder

Figure 3-4 provides a visual overview of using the Folder Finder to find and open a study.

Figure 3-4 Using the Folder Finder to find and open a study



### When to use the Folder Finder to find and open studies

The Folder Finder displays studies of every status, except for Scheduled studies. You can:

- Search for a study within a specified time period
- Search for a study for a specific patient

## Using search criteria to find an open studies

Use the Folder Finder to find and open studies that match specific search criteria.

### Steps for this task

To find and open a study using the Folder Finder:

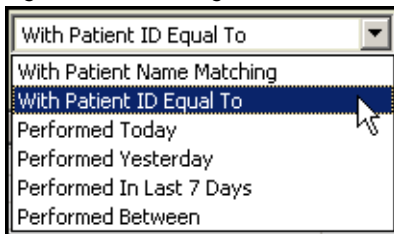
- 1 Click the **Study List** icon on the toolbar.



For other ways to display the Folder Finder, see “[Displaying the Folder Finder](#)” on page 20.

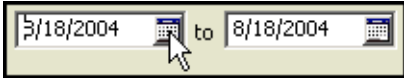


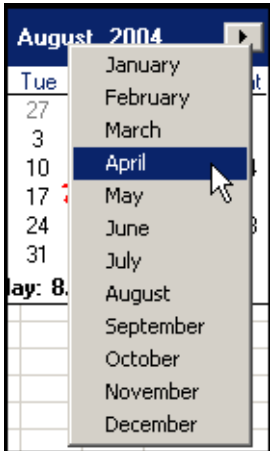
- 2 Click the arrow beside the search criterion currently selected. See *Figure 3-5*.
- 3 Select a search criterion. See “[Folder Finder search criteria](#)” on page 32.

Figure 3-5 Selecting a search criterion



- 4 Depending on the search criterion you select in step 3, complete the following steps:

If...	Then...
You select <b>With Patient Name Matching</b>	<ul style="list-style-type: none"> <li>Type in at least the first letters of the patient's last or first name, and then click the <b>Find</b> button.</li> </ul> <p><b>Note:</b> Do not use the wildcard character “*.”</p>
You select <b>With Patient ID Equal To</b>	<ul style="list-style-type: none"> <li>Type the patient identification in the <b>ID</b> box, and then click the <b>Find</b> button.</li> </ul>

If...	Then... (Continued)
<p>You select <b>Performed Today</b>, <b>Performed Yesterday</b>, or <b>Performed in Last 7 Days</b></p>	<p>The appropriate Study list is displayed.</p> <ul style="list-style-type: none"> <li>Complete steps 5-6 to filter the Study list and open a study from the list.</li> </ul>
<p>You select <b>Performed Between</b></p>	<p>1 Click the <b>Calendar</b> icon beside the first study date box.</p>  <p>A calendar is displayed.</p> 
	<p>2 To select a month, do one of the following:</p> <ul style="list-style-type: none"> <li>Click the scroll arrows</li> </ul>  <ul style="list-style-type: none"> <li>Click on the Month entry, and then select a month from the menu.</li> </ul> 



If...	Then... (Continued)
	<p>3 To select a year, click the year entry, and then click the up or down arrow.</p>  <p>4 On the calendar, click the start date for your search.</p> <p>5 Click the <b>Calendar</b> icon beside the second study date box, and then repeat steps 2-3 to specify an end date for your search.</p>

The Study list displays studies matching the specified criteria.

- To narrow your search, click a filter box, and then select a filter of your choice. To further refine your search, repeat this step and select an additional filter. For details, see ["Refining searches"](#) on page 34.

The filtered Study list is displayed.

- Double-click the study to open it.

### Folder Finder search criteria

The following table describes the search criteria.

Search criterion	Meaning
With Patient Name Matching	Find a study by patient name or portion thereof
With Patient ID Equal To	Find a study by <a href="#">patient ID</a> (also by <a href="#">ID context</a> for that patient ID, if applicable)
Performed Today	Find studies performed today
Performed Yesterday	Find studies performed yesterday
Performed In Last 7 Days	Find studies performed in the last week (including today)
Performed Between	Find studies performed within a certain date range

## Working with filters

This section describes how to filter the [Study list](#).

### In this section

This section contains the following topics:

Topic	See Page
<a href="#">About filters</a>	33
<a href="#">Refining searches</a>	34

### About filters

A filter is a condition or a set of conditions for limiting a study search. You can apply filters to the Study list in the [In-Box](#) and [Folder Finder](#). As a result, only matching studies are listed.

---

**Note:** Your filter settings are saved as your user preferences in the In-Box or Folder Finder. When you next open the In-Box or Folder Finder, the filters you selected during the last session are still applied.

---

### Filtering the In-Box and Folder Finder

The following table describes filtering in the In-Box and Folder Finder.

Filtering	Meaning
In-Box	<p>A filter is applied to the Study list. Studies that match the chosen filter are listed.</p> <p>You can narrow down your search by applying a second filter. Only studies that meet the criteria of both filters will be listed.</p>
Folder Finder	<p>A filter is applied in combination with another search criterion such as patient's name. Only those studies that match both the filter and the search criterion are listed.</p> <p>You can narrow down your search further by applying a second filter. Only studies that meet the criteria of both filters and the search criterion will be listed.</p>

## Available filters

The following table describes the available filter types.

Filter type	Description
Patient Location	Locations to which patients can be assigned.
Modality Types	Equipment used to capture images. For example, CT, DX, or US.
Body Regions	Body regions or body parts that are examined at your site. For example, abdomen, chest, or face.
Work Groups	Medical facilities or departments with which a study can be associated.

**Note:** The filter values are configured specifically for your site. For details, contact your local system administrator.

## Refining searches

To filter the studies in the [Study list](#), you can use a single filter, or a combination of filters. Filters may be selected in the [In-Box](#) or [Folder Finder](#).

### Steps for this task

To find studies using one or more filters:

- 1 Click the **Study List** icon on the toolbar to open the In-Box or Folder Finder



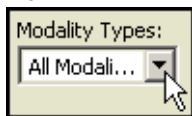
For other ways to display the In-Box or Folder Finder, see [“Displaying the In-Box”](#) on page 16 or [“Displaying the Folder Finder”](#) on page 20.

- 2 Click the arrow beside any of the following [filter types](#):

- Patient Locations
- Modality Types
- Body Regions
- Work Groups

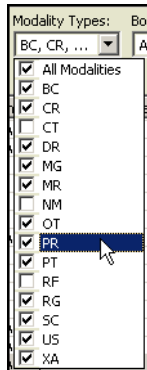
See [“Available filters”](#) on page 34.

Figure 3-6 Selecting a filter



- 3 Select or clear the filter values in the list.

Figure 3-7 Selecting a filter value



**Note:** If all filter values are currently selected, click the All filter value to clear all filter values in the list, and then select individual values. As a result, you do not have to clear each value individually.

- 4 Repeat steps 2-3 to apply additional filters values.  
The matching Study list is displayed.
- 5 Double-click the study you want to open.

## Opening additional studies for the same patient

This section describes how to open additional studies for the same patient.

### In this section

This section contains the following topics:

Topic	See Page
Overview of opening additional studies for the same patient	36
Automatically opening additional studies for the same patient	37
Manually opening additional studies for the same patient	37

## Overview of opening additional studies for the same patient

Multiple studies can be opened for a patient during a review session.

### About anchor, reference, and grouped studies

Depending on the order in which the studies are opened, a study can be opened as the anchor study or a reference study. Grouped studies can also be opened as reference studies.

The following table describes the study types.

Study type	Meaning
Anchor study	The first study opened for a particular patient. Usually, this is the most recent study created for that patient.
Reference studies	Additional studies opened after the anchor study. Typically, they are prior studies relevant for interpreting the anchor study.
Grouped studies	<p>Studies that have the following properties:</p> <ul style="list-style-type: none"> <li>Contain identical images as the anchor study</li> <li>Have the same study date and time as the anchor study</li> </ul> <p>For example, a body CT scan may be broken down into multiple studies of different procedure types. Grouped studies may be reported by different physicians and billed separately.</p>

## Two ways to open additional studies for the same patient

After a study is opened, additional studies for the patient can be opened automatically and manually. Refer to the following topics:

- “Automatically opening additional studies for the same patient” on page 37
- “Manually opening additional studies for the same patient” on page 37

## Automatically opening additional studies for the same patient

When a study is opened, Horizon Rad Station automatically applies a **display protocol** to the study. Based on the display protocol properties and your display protocol preference, Horizon Rad Station identifies studies relevant for interpreting the **anchor study**, and opens them as **reference studies** if configured to do so. For details, see “About display protocols” on page 212.

In addition, **grouped studies** may be considered as relevant studies at your site. In this case, they may also be automatically opened. For details, contact McKesson Medical Imaging Group.

## Manually opening additional studies for the same patient

Additional studies belonging to the same patient can be manually opened. You can display the studies on a specific monitor, or on the same monitor as the **anchor study**.

### Displaying an additional study on a specific monitor

To display an additional study on a specific monitor:

- 1 Click the Study Information bar, on the monitor where you want to display the study.



Relevant studies and **grouped studies** are listed respectively:

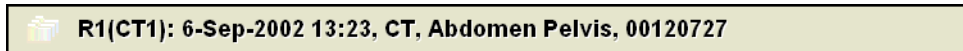
- Relevancy of studies is determined by the **display protocol** that is currently applied to the anchor study. The anchor study and **reference studies** that are already open are also listed as relevant studies. For details, see “About display protocols” on page 212.
- The grouped studies are indicated by the letter **G**, followed by a number. The order of grouped studies is based on the **Study IDs**.

Figure 3-8 A list of relevant studies and grouped studies.

A:	17-Sep-2003 9:52	CT	Abdomen Pelvis, 20002018
R1(CT1):	6-Sep-2002 13:23	CT	Abdomen Pelvis, 10120727
	22-Jan-1999 6:31	MR	Cervical Spine
G1:	17-Sep-2003 9:52	CT	Head, 20002018
G2:	17-Sep-2003 9:52	CT	HEAD CTA, 20002018
All Studies ▶			
<input checked="" type="checkbox"/> Fill This Screen			

- 2 From the menu that is displayed, select **Fill This Screen**. The check mark beside it indicates that the option is selected.
- 3 Click the Study Information bar again, and then select the study from the list.  
Alternatively, click the Study Information bar and point to **All Studies**, and then select the study.  
The study is displayed on the specified monitor. The Thumbnail toolbar for the study is displayed, and the Study Information bar indicates that the study is displayed on the monitor.

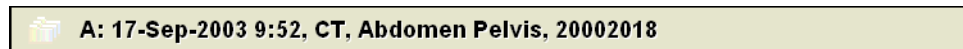
Figure 3-9 An additional study is displayed on a specific monitor



### Displaying an additional study on the same monitor as the anchor study

To display an additional study on the same monitor as the anchor study:

- 1 Click the Study Information bar.

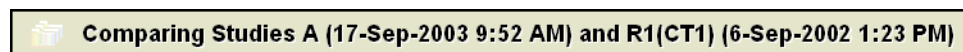


Relevant studies and **grouped studies** are listed respectively. See *Figure 3-8* on page 37.

- Relevancy of studies is determined by the **display protocol** that is currently applied to the anchor study. The anchor study and **reference studies** that are already open are also listed as relevant studies. For details, see **"About display protocols"** on page 212.
  - The grouped studies are indicated by the letter **G**, followed by a number. The order of grouped studies is based on the Study IDs.
- 2 From the menu that is displayed, clear the **Fill This Screen** check box.
  - 3 Click the Study Information bar again, and then select the study from the list.  
Alternatively, click the Study Information bar and point to **All Studies**, and then select the study.  
The Thumbnail toolbar for the study is displayed.
  - 4 **Drag** the thumbnail that represents the **series** you want to display, into a viewport on the monitor that displays the anchor study.

Series within two studies are displayed on the same monitor. The Study Information bar indicates that the two studies are being compared.

Figure 3-10 Series within two studies are displayed on the same monitor



## Switching between open studies for different patients

You can switch between open studies belonging to different patients.

### Steps for this task

To switch between open studies belonging to different patients:

- 1 Click the Patient Identification button at the top of the **work area**. The button indicates the number of patients for whom studies are currently open.



- 2 From the menu that is displayed, select the patient whose study you want to view. The check mark indicates the patient whose study is currently displayed.



## Viewing studies containing QA issues



Studies containing unresolved QA issues are identified in the following ways:

- The letter **Q** in the **QA Issue** column of the Study list. See “[Finding and opening studies containing patient documents from the Study list](#)” on page 199.
- A message describing the QA issue is displayed on the Study Information page of the Patient Portfolio. See “[Viewing study information](#)” on page 203.

### Steps for this task

To view a study containing QA issues:

- Do one of the following:

If...	Then...
The study is currently open	<ol style="list-style-type: none"> <li>1 Click the <b>Documents</b> icon on the main toolbar.   <p>The <b>Patient Portfolio</b> is displayed.</p> </li> <li>2 Click the <b>Study Information</b> folder.   </li> </ol>
The Study list is displayed	<ol style="list-style-type: none"> <li>1 Locate the study, and then determine if the <b>Q</b> marker is displayed in the <b>QA Issue</b> column.</li> <li>2 Double-click the study to open it.</li> <li>3 Click the <b>Documents</b> icon on the main toolbar.  <p>The <b>Patient Portfolio</b> is displayed.</p> </li> <li>4 Click the <b>Study Information</b> folder.</li> </ol>

A message is displayed on the Study Information page, describing the QA issue. See [Figure 3-11](#) on page 41.

Figure 3-11 QA issue displayed on the Study Information page

<p>Documents for  <b>Last name, First name</b>                  ID: 325780(DEFAULT)</p> <p><b>Patient Information</b></p> <ul style="list-style-type: none"> <li>03-Sep-2003 07:45 US                      OB 22 Weeks                      Ultrasound Kidney Localization for Biopsy</li> <li style="background-color: #f0f0f0;">03-Sep-2003 07:44 US                      OB 18 Weeks                      OB Ultrasound - Limited Scan</li> <li>Letter, Portrait</li> <li>Letter, Portrait</li> <li>06-Aug-2003 07:42 US                      OB Amniocentesis</li> </ul>	<p><b>Study Information</b>                  US A1156</p> <hr/> <p style="color: red; text-align: center;"><b>The study information below may not be fully correct due to unresolved QA issues</b>                  No Matching Scheduled Study.</p> <p>Study Priority: <b>Routine</b>                  Study Status: <b>Performed</b>                  Pregnancy Status: <b>Unknown</b>                  Age(at time of study): <b>20 Y</b></p> <hr/> <p>Patient Class: <b>Unknown</b>                  Device Location: <b>clever1</b>                  Body Region: <b>Pregnancy 2nd/3rd T</b></p> <hr/> <p>Referring Physician: <b>Driver, Dawn</b>                  Performed By: <b>Terrace, Lisa</b>                  Accession: <b>00005588</b></p> <hr/> <p>Study ID: <b>CONFIDENTIAL</b></p>	<p>Patient Name: <b>Last name, First name</b>                  DOB: <b>00-Nov-1900</b>                  ID: <b>00013747(DEFAULT)</b>                  Study Date: <b>20-Jan-2005 10:05</b></p>
--	--	--

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## Chapter 4 - Working with series

This section describes how to display and view series.

### In this section

This section contains the following topics:

Topic	See Page
Displaying series	44
Navigating a series	54
Cycling series	57
Re-ordering series	61
Setting screen and viewport layout	62
Working with linked series	64

## Displaying series

This section describes how to display series. You can specify which images within the series to view, and in which mode to view them.

### In this section

This section contains the following topics:

Topic	See Page
<a href="#">Displaying a series in a viewport</a>	44
<a href="#">Displaying all images and all flagged images in a viewport</a>	45
<a href="#">Displaying a series in a separate window</a>	46
<a href="#">Selecting the series display mode</a>	49
<a href="#">Specifying the series viewing scope</a>	51
<a href="#">Moving series between viewports</a>	52

## Displaying a series in a viewport

You can manually display a [series](#) of your interest in a [viewport](#). In addition, you can display the same series in multiple viewports with different presentation settings, for comparison purposes. For an overview of the viewports, see “[Understanding viewports](#)” on page 354.

A series can be displayed in a viewport, in one of the following ways:

- Use the [Thumbnail toolbar](#)
- Use the [Thumbnail dialog box](#)

---

**Note:** Beside displaying a series in a viewport, you can display a series in a [Zoom window](#) or [Survey window](#). See “[Displaying a series in a separate window](#)” on page 46.

---

## Displaying a series using the Thumbnail toolbar

For details on the Thumbnail toolbar, see “[About the Thumbnail toolbar](#)” on page 349.

To display a series in a viewport using the Thumbnail toolbar:

- 1 Click the viewport in which you want to display a series.
- 2 Click the thumbnail representing the series you want to display.

Alternatively, instead of steps 1-2, [drag](#) the thumbnail into the viewport of your choice.

## Displaying a series using the Thumbnail dialog box

For details on the Thumbnail dialog box, see “Thumbnail dialog box” on page 352.

To display a series in a viewport using the Thumbnail dialog box:

- 1 At the top of the viewport in which you want to display a series, click the Series Selector button. The button indicates the currently displayed series in the viewport.



The Thumbnail dialog box is displayed.

- 2 Click the thumbnail representing the series you want to display.

The Thumbnail dialog box is closed, and the series is displayed in the viewport.

## Displaying all images and all flagged images in a viewport

You can display all images within the study, or all flagged images, in a [viewport](#).

### Restrictions for displaying all images

Studies associated with some [modalities](#), for example, [CT](#) and [MR](#), can contain many images. For this reason, your site may be configured so that you cannot display all images within a study. For details on your site configuration, contact McKesson Medical Imaging group.

The All Images button or All Images label is displayed to the left of the [Thumbnail toolbar](#).

Displayed on Thumbnail toolbar	Meaning
All Images button 	All images within the study can be displayed. For details, see “ <a href="#">Displaying all images in a viewport</a> ” on page 45.
All Images label 	Indicates that all images of a study cannot be displayed.

### Displaying all images in a viewport

To display all the study images in a single viewport:

- 1 Click the viewport in which you want to display all the study images.
- 2 Click the All Images button. The button is located to the left of the thumbnails.



Alternatively, instead of steps 1-2, [drag](#) the All Images button into the viewport of your choice.

## Displaying all flagged images

To display all the flagged images a study contains, in a single viewport:

- 1 Click the viewport in which you want to display all the flagged images.
- 2 Click the Flagged Images button. The button is located above the All Images button.



Alternatively, instead of steps 1-2, drag the Flagged Images button into the viewport of your choice.

## Displaying a series in a separate window

This section describes how to display a series in a separate window.

### In this section

This section contains the following topics:

Topic	See Page
About displaying a series in a separate window	46
Steps for displaying a series in a separate window	48

### About displaying a series in a separate window

After displaying a series in a viewport, you can display it in a window that rests on top of the viewports. You can manipulate the images temporarily, and then close the window without affecting the images displayed in the viewports. For details, see “Steps for displaying a series in a separate window” on page 48.

### Zoom window and Survey window

The following table describes the two types of windows in which you can display a series.

Window	Description
Zoom window	<p>Images are displayed on top of one another. See <i>Figure 4-1</i>.</p> <p>A Zoom window is typically used for zooming the displayed images temporarily. For details, see “Zooming images” on page 85.</p> <p>You can display multiple Zoom windows on each monitor.</p>

Window	Description
<p>Survey window</p>	<p>Images are tiled. See <i>Figure 4-2</i>.</p> <p>A Survey window is typically used for changing the image layout temporarily. For details, see “<a href="#">Setting the viewport layout</a>” on page 63.</p> <p>You can display one Survey window per monitor only. In addition, you cannot move a Survey window.</p> <hr/> <p><b>Note:</b> A Survey window displays series that contains multiple images only. If the series contains one image, a Zoom window is displayed instead.</p>

Figure 4-1 Zoom window

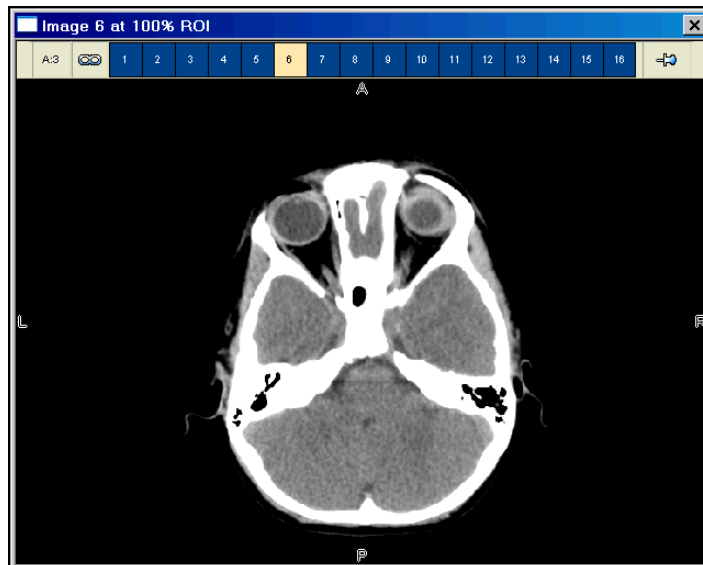
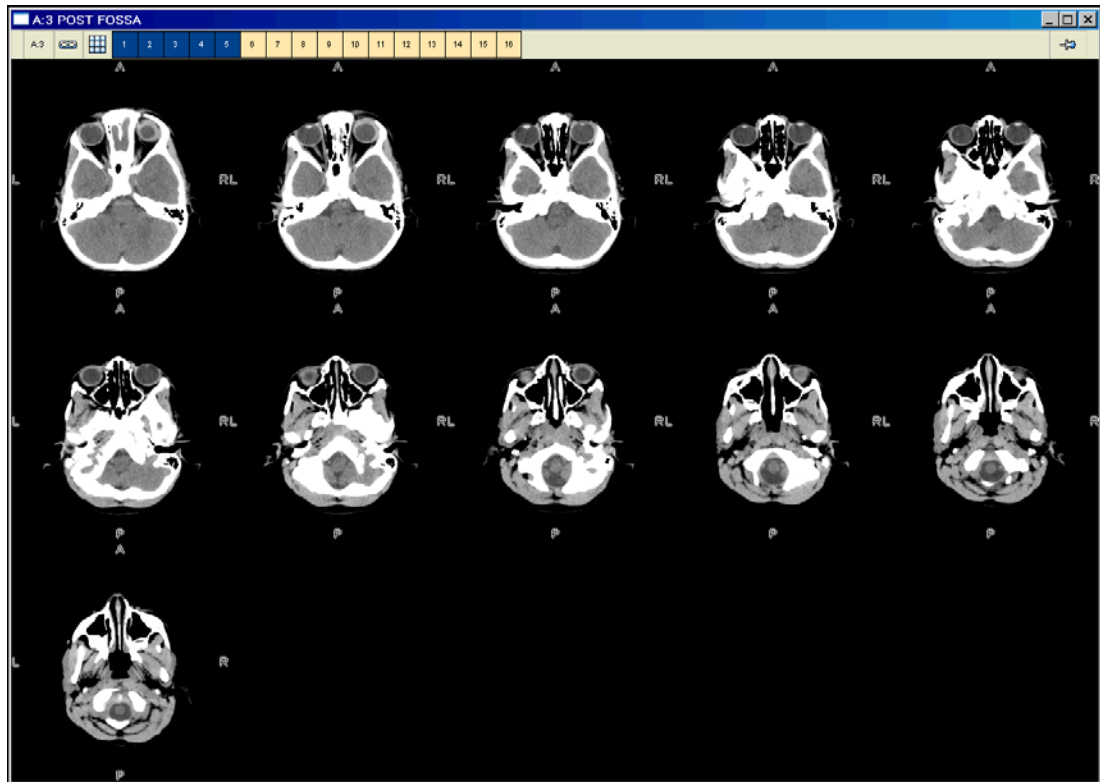




Figure 4-2 Survey window



## Steps for displaying a series in a separate window

A [Zoom window](#) or [Survey window](#) can be displayed from:

- The [main toolbar](#)
- The [Thumbnail toolbar](#)
- The right-click menu

Alternatively, use your own [shortcuts](#) to display the windows. To set up shortcuts, see [“Adding and modifying user shortcuts”](#) on page 304.

## Displaying a Zoom window or Survey window from the main toolbar

To display a Zoom window or Survey window from the main toolbar:

- 1 Click the [viewport](#) that holds the series you want to display in a separate window.
- 2 Click the arrow beside the **Zoom** icon on the main toolbar.



- 3 From the menu that is displayed, specify the window in which to display the series.

If...	Then...
Displaying the series in a Zoom window	Select <b>Open in Zoom window</b> .
Displaying the series in a Survey window	Select <b>Open in Survey window</b> .

## Displaying a Zoom window or Survey window from the Thumbnail toolbar

To display a Zoom window or Survey window from the Thumbnail toolbar:

- Right-click the thumbnail, and then select **Open in Zoom window** or **Open in Survey window**.

## Displaying a Zoom window or Survey window from the right-click menu

To display a Zoom window or Survey window from the right-click menu:

- Right-click the viewport and point to **Zoom**, and then select the option.

---

**Note:** Whether the **Zoom** option is displayed on the right-click menu depends on your right-click preferences. See [“Right-click menu preferences”](#) on page 301.

---

## Selecting the series display mode

Images have two [series](#) display modes.

---

**Note:** Cross-sectional images can also be displayed as [multi-planar reconstruction \(MPR\)](#) images. For details, see [“Creating MPR images”](#) on page 98.

---

## Available series display modes

The following table describes the available series display modes.

Series display mode	Meaning
Standard	<p>Still images are displayed.</p> <p>You can scroll through a series in Standard mode, or jump to a specific image. For details, see <a href="#">“Navigating a series”</a> on page 54.</p>
Cine	<p>Images are displayed as a sequence of frames, as if you are viewing a <a href="#">cine clip</a>. For details on cine clips, see <a href="#">“Working with cine clips”</a> on page 185.</p> <hr/> <p><b>Note:</b> Series containing only one image cannot be displayed in Cine mode.</p>

## Steps for this task

To select the series display mode:

- 1 Click the **Display Mode** icon at the top of the viewport. The **Display Mode** icon indicates the types of images currently displayed. For details, see [“Specifying the series viewing scope”](#) on page 51.




---

**Note:** The **Display Mode** icon is not displayed if the series contains only one image.

---

- 2 From the menu that is displayed, select the series display mode of your choice. For details, see [“Available series display modes”](#) on page 50.

## Specifying the series viewing scope





The series viewing scope determines which images are displayed in the **viewports**. You can:

- Display all images within a **series**
- Display selected images within a series only. For details, see **“Selecting and deselecting images”** on page 74.
- Display selected images only, to view the images before exporting them. For details, see **“Selecting and deselecting images”** on page 74.
- Display flagged images within a series only, to view images that are clinically significant. A flagged image can be identified by the red triangle on the bottom of its chit. For details, see **“Flagging and unflagging images”** on page 75.

### Steps for this task

To specify the series viewing scope:

- 1 Click the **Display Mode** icon at the top of the viewport. The **Display Mode** icon indicates the types of images currently displayed.

Icon	Meaning
	All images in the series are displayed in the viewport.
	Selected images in the series are displayed in the viewport.
	Flagged images in the series are displayed in the viewport.
	<b>Multi-planar reconstruction (MPR)</b> images are displayed in the viewport. For details, see <b>“Creating MPR images”</b> on page 98.

**Note:** The **Display Mode** icon is not displayed if the series contains only one image.

- From the menu that is displayed, select the option of your choice:

If...	Then...
Displaying all images	Select <b>All Images</b> .
Displaying selected images only	Select <b>Selected Images Only</b> .
Displaying flagged images only	Select <b>Flagged Images Only</b> .

The images in the series are displayed accordingly.

## Moving series between viewports

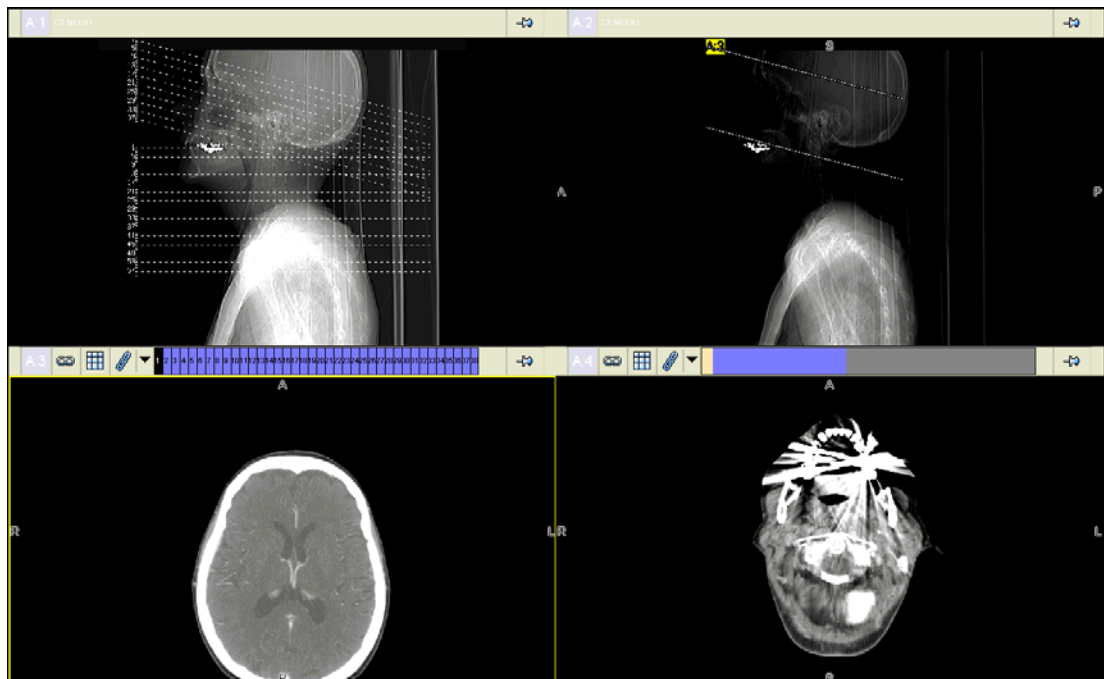
You can quickly move a **series** from one **viewport** to another. For an overview of the viewports, see “**Understanding viewports**” on page 354.

To move a series into a new viewport:

- Drag** the viewport that contains the series you want to move, to the destination viewport.

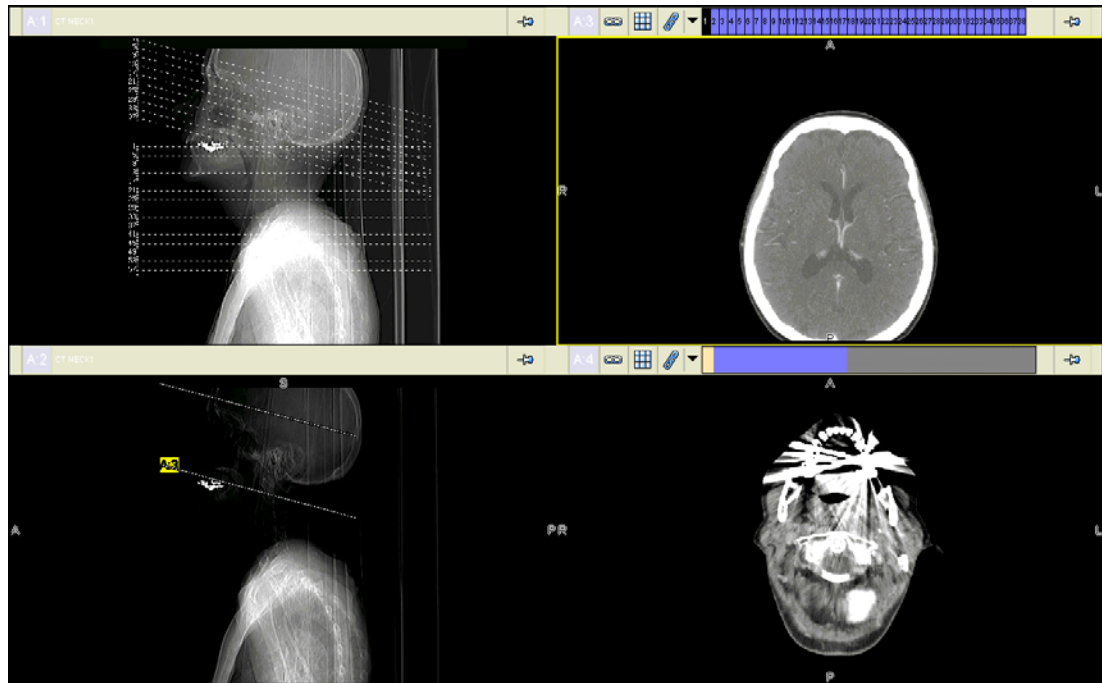
For example, in *Figure 4-3*, series 1, 2, 3, and 4 are displayed in viewports 1, 2, 3, and 4 respectively.

*Figure 4-3 Series 1,2, 3, and 4 are displayed*



In *Figure 4-4*, series 3 is moved from viewport 3 to viewport 2.

Figure 4-4 Series 1, 3, 2, and 4 are displayed



---

## Navigating a series

This section describes how to navigate a series.

### In this section

This section contains the following topics:

Topic	See Page
<a href="#">Scrolling through a series</a>	54
<a href="#">Jumping to a specific image</a>	55
<a href="#">Moving through a series using Power Scrolling</a>	56

### Scrolling through a series

When a [series](#) is displayed in a [viewport](#), you can scroll through the series to review the images within.

If the series you scroll through shares a spatial relationship with another series, you can display the cross-reference lines, to view the intersecting location of the series with respect to the related series. See [“Displaying or hiding cross-reference lines”](#) on page 81.

### Scrolling through a linked series

If the series is linked to another series within the study, the corresponding images in the linked series are displayed as you scroll through the series. For details on series linking, see [“Working with linked series”](#) on page 64.



---

**Note:**

- The linked series must share a spatial relationship in order to scroll simultaneously.
  - Series linking does not apply to series in a [Zoom window](#) or [Survey window](#). For details, see [“Zoom window and Survey window”](#) on page 46.
-

## Steps for this task

To scroll through a series:

If...	Then...
Scrolling up the series	Do one of the following: <ul style="list-style-type: none"> <li>• Rotate the mouse wheel up</li> <li>• Click the <b>Previous</b> icon on the main toolbar.</li> </ul> 
Scrolling down the series	Do one of the following: <ul style="list-style-type: none"> <li>• Rotate the mouse wheel down</li> <li>• Click the <b>Next</b> icon on the main toolbar.</li> </ul> 

Alternatively, use your own [shortcuts](#) to scroll through a series. To set up shortcuts, see [“Adding and modifying user shortcuts”](#) on page 304.

**Note:** You can also use Power Scrolling, to quickly scroll through a large multi-slice series. For details, see [“Moving through a series using Power Scrolling”](#) on page 56.

## Jumping to a specific image

You can quickly display a particular image within a [series](#).

### Steps for this task

To jump to a specific image:

- Click the chit corresponding to the specific image. The chits are located at the top of the [viewport](#). For an overview of the viewports, see [“Understanding viewports”](#) on page 354.

Alternatively, use your own [shortcuts](#) to jump to the first, middle, and last image in a series. To set up shortcuts, see [“Adding and modifying user shortcuts”](#) on page 304.



## Moving through a series using Power Scrolling

Power Scrolling enables you to quickly scroll through a large multi-slice **series**. Typically, large multi-slice series exist within cross-sectional body scans, which are **CT** and **MR** studies for the chest, abdomen, and pelvis. A multi-slice series contains 200 or more cross-sectional images.

### Pre-requisite

Power Scrolling must be enabled in your Power Scrolling preferences. See “**Power Scrolling preferences**” on page 298.

### Step for this task

To scroll through a series using Power Scrolling:

- 1 Start Power Scrolling in one of the following ways:
  - Press, and then release, the mouse wheel or middle mouse button
  - Hold down the mouse wheel or middle mouse button

How to start Power Scrolling depends on your preferences. For details, see “**Power Scrolling preferences**” on page 298.

- 2 Scroll through the series, according to the Power Scroll Mode in your preferences:

If...	Then...
Power Scroll Mode is Proportional (Scrolling speed depends on how fast you move the mouse)	Move the mouse in one of the following ways: <ul style="list-style-type: none"> <li>• Left and right</li> <li>• Up and down</li> </ul> The direction to scroll depends on your preferences. For details, see “ <b>Power Scrolling preferences</b> ” on page 298.
Power Scroll Mode is Velocity (Scrolling speed depends on the location of the mouse pointer)	Move the mouse in one of the following ways: <ul style="list-style-type: none"> <li>• Left and right of the image center</li> <li>• Above or below the image center</li> </ul> The direction to scroll depends on your preferences. For details, see “ <b>Power Scrolling preferences</b> ” on page 298.

- 3 Press the mouse wheel or click the middle mouse button to finish Power Scrolling.

## Cycling series

This section describes how to cycle series.

### In this section

This section contains the following topics:

Topic	See Page
<a href="#">About cycling series</a>	57
<a href="#">Cycling series examples</a>	58
<a href="#">Pinning and unpinning a viewport</a>	58
<a href="#">Steps for cycling series</a>	60

### About cycling series

Cycling [series](#) enables you to quickly page through series, to identify series that are relevant for making a [diagnosis](#). As a result, you do not need to manually display the series one-by-one, by [dragging](#) the corresponding thumbnails into the [viewports](#).

Series can be cycled in two directions:

Cycle direction	Meaning
Forward	The next set of series in the study are displayed.
Backward	The previous set of series in the study are displayed.

You can cycle series for a study. In addition, if you are comparing studies belonging to the same patient, you can cycle series for the studies simultaneously. For details, see [“Cycling series examples”](#) on page 58 and [“Steps for cycling series”](#) on page 60.

### Restrictions for cycling series

The following restrictions exist:

- A viewport is not used for cycling series in one of the following situations:
  - You manually specify that the viewport is not used for cycling series. For details, see [“Pinning and unpinning a viewport”](#) on page 58.
  - [Multi-planar reconstruction \(MPR\)](#) images or all flagged images are displayed. For details, see [“Creating MPR images”](#) on page 98.
  - All the images in the study are displayed as a series in the viewport.
- Depending on the [display protocol](#) currently applied to the study, empty viewports may not be used for cycling series. For details, see [“About display protocols”](#) on page 212.

## Cycling series examples

The following examples show how series are cycled. For details, see “[Steps for cycling series](#)” on page 60.

### Example 1: A study of 10 series is displayed on one monitor

The number of times you need to [cycle forward](#) depends on the number of [viewports](#) used for cycling series.

For example, if there are four viewports on the screen and all of them are used for cycling series, you can view the entire study by cycling forward twice:

Workflow	Series placement
1 Initial series placement	Series 1 through 4 are displayed.
2 Cycle forward	Series 5 through 8 are displayed.
3 Cycle forward	Series 9 and 10 are displayed. Two viewports are empty.

### Example 2: One viewport is not used for cycling series

When a [viewport](#) is not used for cycling series, the series placement is affected.

Compared to Example 1, if the first viewport is not used for cycling series, different series are displayed when you [cycle forward](#):

Workflow	Series placement
1 Initial series placement	Series 1 through 4 are displayed.
2 Cycle forward	Series 1, and 5 through 7 are displayed.
3 Cycle forward	Series 1, and 8 through 10 are displayed.

For situations in which a viewport is not used for cycling series, see “[Restrictions for cycling series](#)” on page 57.

## Pinning and unpinning a viewport

Pinning and unpinning a [viewport](#) enables you to specify whether the viewport is used for cycling [series](#). For details, see “[About cycling series](#)” on page 57.

---

**Note:** Whether empty viewports are used for cycling series is defined in the [display protocol](#) currently applied to the study. For details on display protocols, see “[About display protocols](#)” on page 212.

---

The following table describes the pinning status of viewports.

If...	Then...
A viewport is pinned	<p>The viewport is not used for cycling series. When you cycle series, the same series is displayed.</p> <p>For details, see <a href="#">“Example 2: One viewport is not used for cycling series”</a> on page 58.</p> <p>A common use for pinning is to pin viewports that hold posted scouts in <a href="#">CT/ MR</a> studies.</p>
A viewport is unpinned	<p>The viewport is used for cycling series. When you cycle series, a different series is displayed.</p>

### Restriction for unpinning a viewport

You cannot unpin a viewport when [multi-planar reconstruction \(MPR\)](#) images or all flagged images are displayed. For details, see [“Creating MPR images”](#) on page 98.

### Automatically pinning a viewport



A viewport is automatically pinned in one of the following situations:

- MPR images or all flagged images are displayed.
- The series is displayed by [dragging](#) the corresponding thumbnail into the viewport.

### Manually pinning or unpinning a viewport

To manually pin or unpin a viewport:

- Click the **Pin** icon at the top right corner of the viewport. The **Pin** icon indicates whether the viewport is currently pinned.

Icon	Meaning
	The viewport is currently pinned and is not used for cycling series.
	The viewport is currently unpinned and is used for cycling series.

## Steps for cycling series

For an overview of cycling series, see [“About cycling series”](#) on page 57.



### Steps for this task

To cycle series:

- 1 Specify which [viewports](#) are used for cycling series. See [“Pinning and unpinning a viewport”](#) on page 58.
- 2 Specify the studies for which you want to cycle series:

If...	Then...
Cycling series for one study	Click an image from the study.
Cycling series for multiple studies	Hold down the CTRL key, and click an image from each study.

- 3 Cycle series as follows:

If...	Then...
Cycling forward	Click the <b>Cycle Next</b> icon on the Study toolbar. 
Cycling backward	Click the <b>Cycle Previous</b> icon on the Study toolbar. 

The next or previous set of series are displayed in the viewports that are used for cycling series.

Alternatively, instead of steps 2-3, use your own [shortcuts](#) to cycle series. To set up shortcuts, see [“Adding and modifying user shortcuts”](#) on page 304.

## Re-ordering series

You can change the sequence of the **series** in the study. Horizon Rad Station regenerates the series numbers based on the new sequence.

### Steps for this task

To re-order series:

- **Drag** the thumbnail to the new location on the **Thumbnail toolbar**. For details on the Thumbnail toolbar, see **“Using the Thumbnail toolbar”** on page 349.

## Setting screen and viewport layout

This section describes how to set screen and viewport layout.

### In this section

This section contains the following topics:

Topic	See Page
Setting the screen layout	62
Setting the viewport layout	63

### Setting the screen layout

The screen layout specifies how many **viewports** to display on a screen. For an overview of the viewports, see “[Understanding viewports](#)” on page 354.

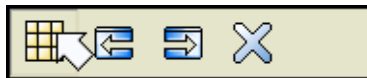
You can set the screen layout in one of the following ways:

- Select a predefined screen layout that is commonly used for the **modality** of the study
- Manually specify the screen layout

### Steps for this task

To set the screen layout:

- 1 Click the **Screen Layout** icon on the Study toolbar.



Alternatively, right-click an image and point to **Layout**, and then select **Screen**.

**Note:** Whether the **Layout** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

- 2 From the menu that is displayed, select the option of your choice:

If...	Then...
Selecting a predefined screen layout	Select the screen layout of your choice. For example, if you select the <b>Vertical Split (1x2)</b> layout, the screen will contain 1 row and 2 columns (2 viewports in total).
Specifying the screen layout	Move the <b>mouse pointer</b> to specify the number of viewports to display, and then click.

The screen layout is updated accordingly.

## Setting the viewport layout

The viewport layout specifies how many images to display in a **viewport** at a time. For an overview of the viewports, see “[Understanding viewports](#)” on page 354.

You can set the viewport layout in one of the following ways:

- Select a predefined viewport layout that is commonly used for the **modality** of the study
- Manually specify the viewport layout

### Steps for this task

To set the viewport layout:

- 1 Click the **Layout** icon at the top of the viewport.



Alternatively, right click an image and point to **Layout**, and then select **Viewport**.

**Note:** Whether the **Layout** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

- 2 From the menu that is displayed, select the option of your choice:

If...	Then...
Selecting a predefined viewport layout	Select the viewport layout of your choice. For example, if you select the <b>Horizontal Split (2x1)</b> layout, your viewport will contain 2 rows and 1 column (2 images in total).  Alternatively, use your own <b>shortcuts</b> to select a predefined viewport layout. To set up shortcuts, see “ <a href="#">Adding and modifying user shortcuts</a> ” on page 304.
Specifying the viewport layout	Move the <b>mouse pointer</b> to specify the number of images to display, and then click.

The viewport layout is updated accordingly.



## Working with linked series

This section describes how to work with linked series.

### In this section

This section contains the following topics:

Topic	See Page
Linking and unlinking series	64
Applying registration to series	65
Applying an offset to a series	69
Removing offsets and registrations	70
Scrolling other linked series to a defined point	71

## Linking and unlinking series

**Series** containing cross-sectional images can be linked. As a result, the spatial position of the current image is reflected in the other linked series. Linking series enables you to scroll through multiple series simultaneously. For details, see “[Scrolling through a linked series](#)” on page 54.



The linking status for each **viewport** is defined in the **display protocols** currently applied to the study. For details on display protocols, see “[About display protocols](#)” on page 212. You can also manually specify the linking status as follows:

- Link and unlink individual viewports
- Link and unlink all viewports

### Linking or unlinking individual viewports

To link or unlink individual viewports:

- Click the **Link** icon at the top of each viewport you want to link or unlink. The **Link** icon indicates whether the series is currently linked.

Icon	Meaning
	The viewport is currently unlinked.
	The viewport is currently linked.

Alternatively, do one of the following:

- Click the arrow beside the **Link** icon, and then select **Link** or **Unlink**.
- Right-click the viewport and point to **Link**, and then select **Link** or **Unlink**.

---

**Note:** Whether the **Link** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

---

- Use your own [shortcuts](#) to link or unlink the viewport. To set up shortcuts, see “[Adding and modifying user shortcuts](#)” on page 304.

## Linking and unlinking all viewports

To link or unlink all viewports:

- 1 Click the arrow beside the **Link** icon at the top of a viewport.



- 2 From the menu that is displayed, select the option of your choice:

If...	Then...
Linking all viewports	Select <b>Link All</b> .
Unlinking all viewports	Select <b>Unlink All</b> .

Alternatively, instead of steps 1-2, do one of the following:

- Right-click an image and point to **Link**, and then select **Link All** or **Unlink All**.

---

**Note:** Whether the **Link** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

---

- Use your own [shortcuts](#) to link or unlink all viewports. To set up shortcuts, see “[Adding and modifying user shortcuts](#)” on page 304.

## Applying registration to series

When [series](#) are in different [frames of reference](#), scrolling a series does not display the same anatomical region in other linked series.

Apply registration to the series to adjust the link alignment, so that they share the common frame of reference. Registration is applied by identifying the anatomical reference points for the series you want to align. The anatomical reference points are called registration points.

---

**Note:** You can also align images within a series. For details, see “[Applying an offset to a series](#)” on page 69.

---

## Available registration types

The following table describes the two types of registrations in Horizon Rad Station.

Registration type	Meaning
Quick registration	Horizon Rad Station uses the center of each displayed image as a registration point.
Precise registration	Two or more registration points are identified manually. Any location on the displayed images can be used as a registration point.

## Applying quick registration

To apply quick registration:

- 1 Link all series to which you want to apply quick registration. See [“Linking and unlinking series”](#) on page 64.
- 2 For each linked series, scroll to the image whose center you want to use as a registration point.
- 3 Click the arrow beside the **Link** icon at the top of a linked viewport.



- 4 From the menu that is displayed, select **Quick Registration**.

Alternatively, instead of steps 3-4, do one of the following:

- Right-click an image and point to **Link**, and then select **Quick Registration**.

---

**Note:** Whether the **Link** option is displayed on the right-click menu depends on your right-click preferences. See [“Main toolbar preferences”](#) on page 296.

---

- Use your own [shortcut](#) to apply quick registration. To set up a shortcut, see [“Adding and modifying user shortcuts”](#) on page 304.

Quick registration is applied to the series. Scrolling a series displays the corresponding images in the linked series.

## Applying precise registration

To apply precise registration:

- 1 Display the images to which you want to assign the registration points.
- 2 Click the arrow beside the **Link** icon at the top of a viewport.



- 3 From the menu that is displayed, point to **Advanced Reg./Offset**, and then select **Precise Registration**.

Alternatively, instead of steps 2-3, do one of the following:

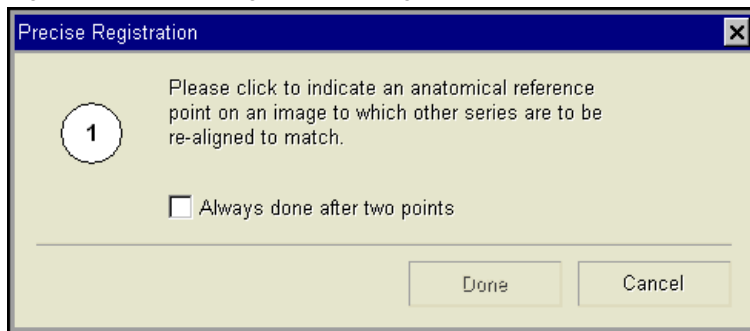
- Right-click an image and point to **Link, Advanced Reg./Offset**, and then select **Precise Registration**.

**Note:** Whether the **Link** option is displayed on the right-click menu depends on your right-click preferences. See “**Main toolbar preferences**” on page 296.

- Use your own **shortcut** to apply precise registration. To set up a shortcut, see “**Adding and modifying user shortcuts**” on page 304.

The **Precise Registration** dialog box is displayed.

Figure 4-5 Precise Registration dialog box



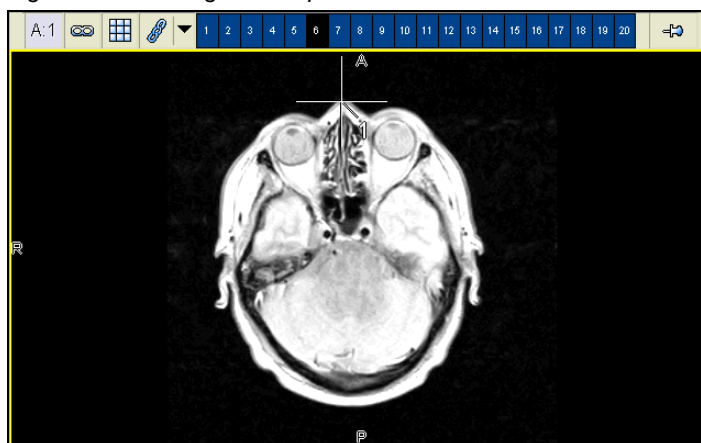
- 4 Specify whether you want to use two or more registration points:

If...	Then...
Using two registration points	Select the <b>Always done after two points</b> check box.
Using more than two registration points	Clear the check box.

- 5 Click the image where you want to use as the first registration point.

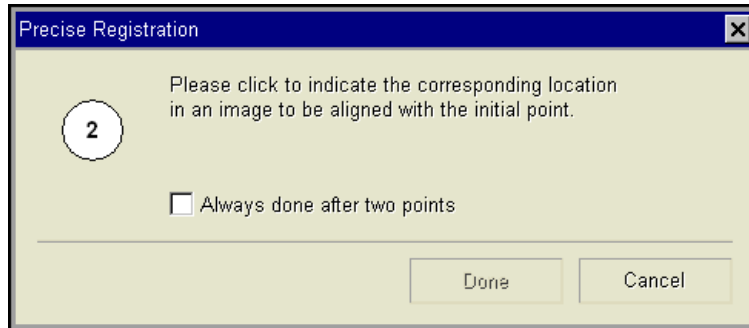
The first registration point is indicated on the image.

Figure 4-6 First registration point is identified



In addition, the **Precise Registration** dialog box is displayed, asking you to identify the second registration point.

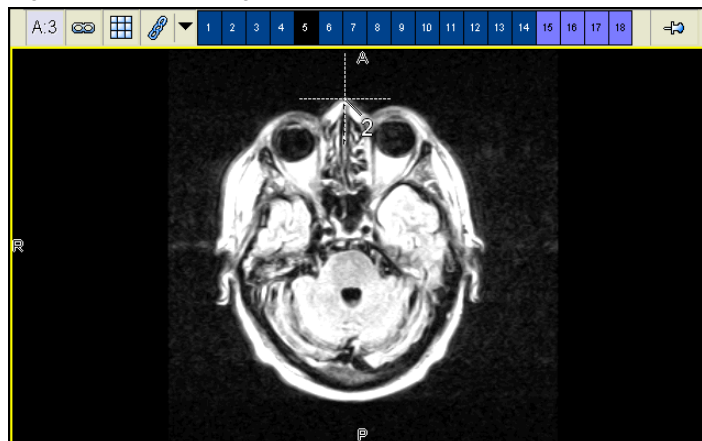
Figure 4-7 Precise Registration dialog box (after the first registration point is identified)



- 6 Click the image you want to use as the second registration point. The second registration point must be in a different frame of reference.

The second registration point is now indicated on the image.

Figure 4-8 Second registration point is identified



- 7 If in step 4, you have specified to use more than two registration points, repeat step 6, until all the registration points are identified.
- 8 Click **Done**.

Precise registration is applied to the series. Scrolling a series displays the corresponding images in the linked series.

## Applying an offset to a series

An offset is a correction made to a [frame of reference](#). You can apply an offset, to align images.

### Available offset types

The following table describes the two types of offsets in Horizon Rad Station.

Offset type	Meaning
Spatial offset	Apply a correction based on spatial relationship. For example, spatial offset is useful when the patient left the <a href="#">image device</a> temporarily during the scan.
Frame count offset	Apply a correction based on the number of frames. For example, frame count offset is useful for simultaneous viewing of bilaterally similar anatomy when the patient was not leveled during the scan.

### Steps for this task

To apply an offset:

- 1 Unlink the series. See [“Linking and unlinking series”](#) on page 64.
- 2 Display the image to which you want to apply an offset.
- 3 Click the arrow beside the **Link** icon at the top of the viewport.



- 4 From the menu that is displayed, point to **Advanced Reg./Offset**, and then specify the type of offset to apply. For details, see [“Available offset types”](#) on page 69.

If...	Then...
Applying a spatial offset	Select <b>Offset by Spatial</b> .
Applying a frame count offset	Select <b>Offset by Frame Count</b> .

Alternatively, instead of steps 3-4, do one of the following:

- Right-click the image and point to **Link, Advanced Reg./Offset**, and then select the option.

**Note:** Whether the **Link** option is displayed on the right-click menu depends on your right-click preferences. See [“Main toolbar preferences”](#) on page 296.

- Use your own [shortcuts](#) to apply an offset. To set up shortcuts, see [“Adding and modifying user shortcuts”](#) on page 304

The corresponding offset is applied and the series is re-linked to the other series.

## Removing offsets and registrations

If you are not satisfied with the applied **offsets** and/or **registrations**, you can remove them from the series or studies. For details on offsets and registrations, see “[Applying an offset to a series](#)” on page 69 and “[Applying registration to series](#)” on page 65.

### Restriction for removing offsets and registrations

Only manually applied offsets and registrations can be removed. When an offset or registration is removed, the original **frame of reference** and/or link alignment of the series or study is restored.

### Removing the offset or registration from a series

To remove the offset or registration from a series:

- 1 At the top of the viewport that holds the series for which you want to reset the adjustment, click the arrow beside the **Link** icon.



- 2 From the menu that is displayed, point to **Advanced Reg./Offset**, and then specify what to remove from the series:

If...	Then...
Removing the offset	Click <b>Remove Offset</b> .
Removing the registration	Click <b>Remove Active Series Registration</b> .

Alternatively, instead of steps 1-2, do one of the following:

- Right-click the viewport and point to **Link/Unlink**, and then select the option.

---

**Note:** Whether the **Link** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

---

- Use your own **shortcuts** to remove the offset or registration. To set up a shortcut, see “[Adding and modifying user shortcuts](#)” on page 304

The offset or registration is removed accordingly.

### Removing all registrations from the study

To remove all registrations from the study:

- 1 Click the arrow beside the **Link** icon at the top of a viewport.



- 2 From the menu that is displayed, point to **Advanced Reg./Offset**, and then click **Remove All Registration**.

Alternatively, instead of steps 1-2, do one of the following:

- Right-click an image and point to **Link, Advanced Reg./Offset**, and then select **Remove All Registration**.

---

**Note:** Whether the **Link** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

---

- Use your own [shortcuts](#) to remove all registrations. To set up a shortcut, see “[Adding and modifying user shortcuts](#)” on page 304

All registrations are removed from the study.

## Removing all offsets and registrations from the study

To remove all offsets and registrations from the study:

- 1 Click the arrow beside the **Link** icon at the top of a viewport.



- 2 Click **Reset all**.

Alternatively, instead of steps 1-2, do one of the following:

- Right-click an image and point to **Link**, and then select **Reset all**.

---

**Note:** Whether the **Link** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

---

- Use your own [shortcuts](#) to remove all offsets and registrations. To set up a shortcut, see “[Adding and modifying user shortcuts](#)” on page 304

All offsets and registrations are removed from the study.

## Scrolling other linked series to a defined point

If a [series](#) shares a spatial relationship with another series, you can see where it bisects the linked series. You can:

- Display the corresponding anatomical point in the linked series
- Interactively display the anatomical point in the linked series

### Displaying a point in the linked series

To display a point in the linked series:

- Double-click on the image where you want to locate in the linked series.

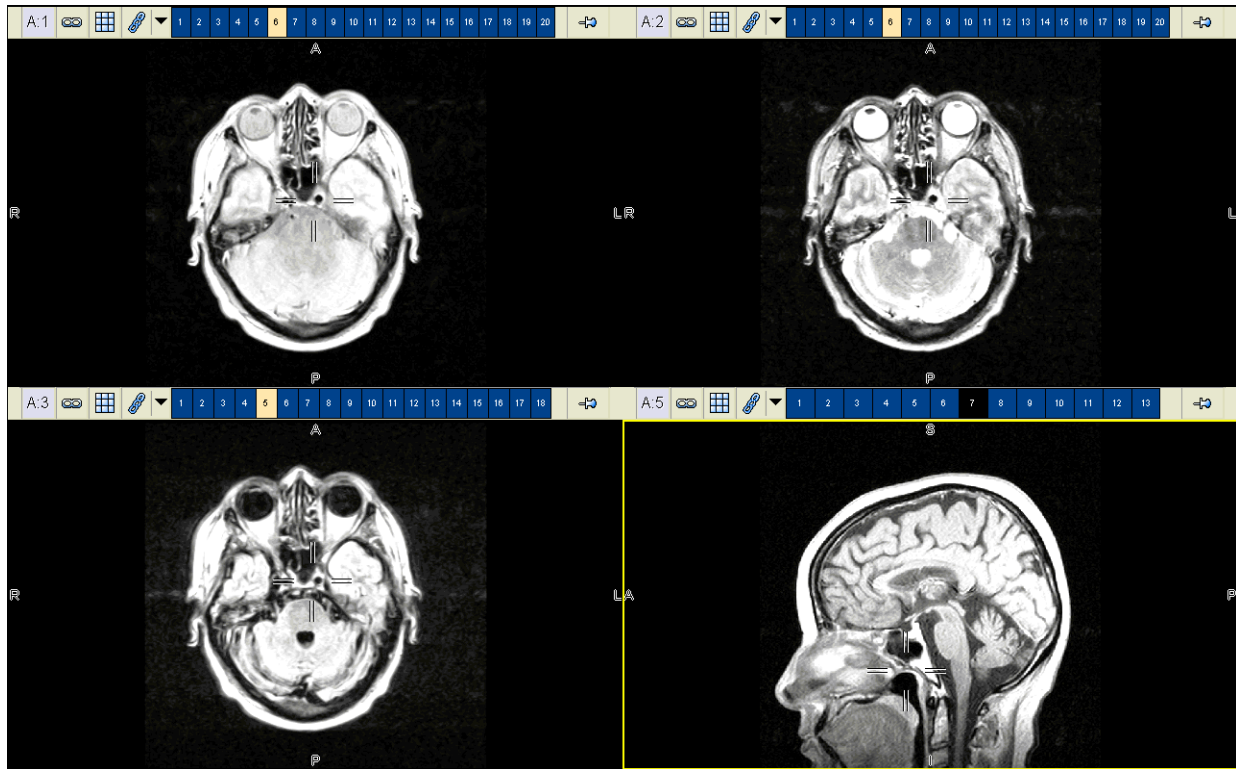
The location and its closest anatomical point in the linked series are indicated.



This Scroll to Point indicator is shown in all the linked series.



Figure 4-9 Scroll to Point indicator is displayed on images



### Interactively display a point in the linked series

You can use your own [shortcut](#) to interactively display a point in the linked series. To set up a shortcut, see [“Adding and modifying user shortcuts”](#) on page 304.

## Chapter 5 - Working with images

This section describes how to manipulate images within a study.

### In this section

This section contains the following topics:

Topic	See Page
Selecting and deselecting images	74
Flagging and unflagging images	75
Viewing images	77
Creating MPR images	98
Changing the image contrast and brightness	105
Changing image compression	137
Resetting the series presentation	136
Adding annotations	139
Using Stored Image Presentations	171
Using Bookmarks	180

## Selecting and deselecting images

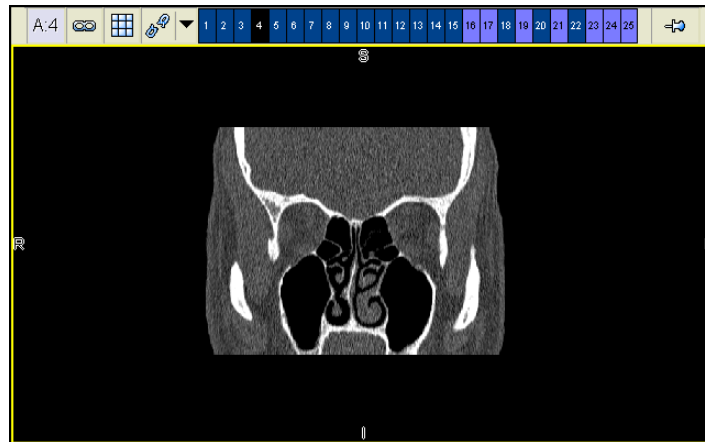
You can select and deselect an individual image, or multiple images.

### Indication of a selected image

A selected image is indicated in the following ways:

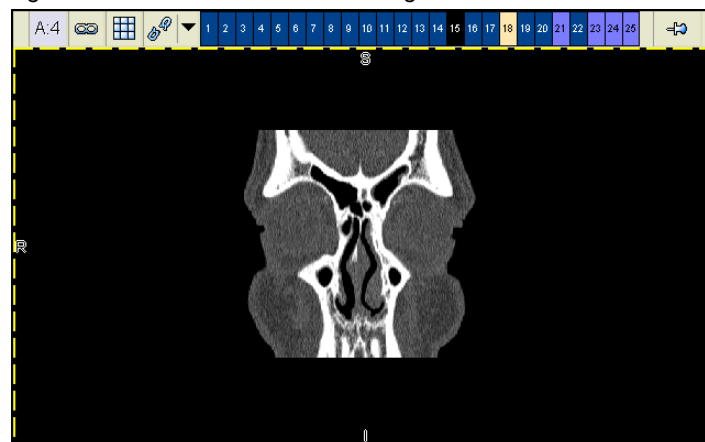
- A selected active image (the last selected image) is surrounded by a solid border.

Figure 5-1 A selected active image



- A selected non-active image is surrounded by a dashed border.

Figure 5-2 A selected non-active image



### Steps for this task

To select and deselect images:

- Click the image that you want to select or deselect. To select or deselect multiple images, hold down the CTRL key, and click the images.

## Flagging and unflagging images

Clinically significant images can be marked with a flag, so that they can be easily located and manipulated. You can flag and unflag an individual image, or multiple images.

### Restrictions for flagging images

The following restrictions exist:

- To manually flag images, you must have the authority to do so. For details, contact your system administrator.
- The **status** of the study must allow image flagging. For details, contact your system administrator.
- **Multi-planar reconstruction (MPR) images** cannot be flagged manually. However, you can view MPR images that were flagged and then saved as a separate series in **Horizon Rad Station Advanced**. For details, refer to the *Horizon Rad Station Advanced User's Guide*.
- Manually flagged images are not saved when you close the study.

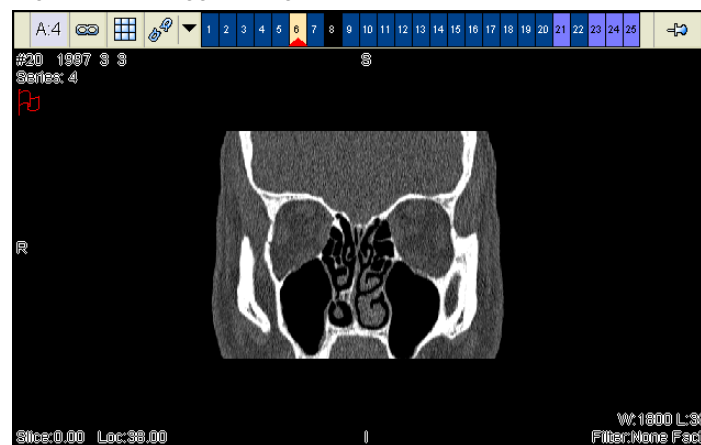
### Indication of a flagged image

A flagged image is indicated in the following ways:

- A red triangle is displayed on the bottom of the **chit**.
- A red flag is displayed on the image as **text overlay**. For details on text overlay, see “**Displaying or hiding text overlay**” on page 77.

Figure 5-3 shows that image 6 is flagged.

Figure 5-3 A flagged image



## Steps for this task

To flag and unflag images:

- 1 Select the images that you want to flag or unflag. See [“Selecting and deselecting images”](#) on page 74.
- 2 Click the **Flag** icon on the main toolbar.



Alternatively, do one of the following:

- Right-click one of the selected images and select **Flag**.

---

**Note:** Whether the **Flag** option is displayed on the right-click menu depends on your right-click preferences. See [“Main toolbar preferences”](#) on page 296.

---

- Use your own [shortcut](#) to flag or unflag the selected images. To set up a shortcut, see [“Adding and modifying user shortcuts”](#) on page 304.

## Viewing images

This section describes how to view images.

### In this section

This section contains the following topics:

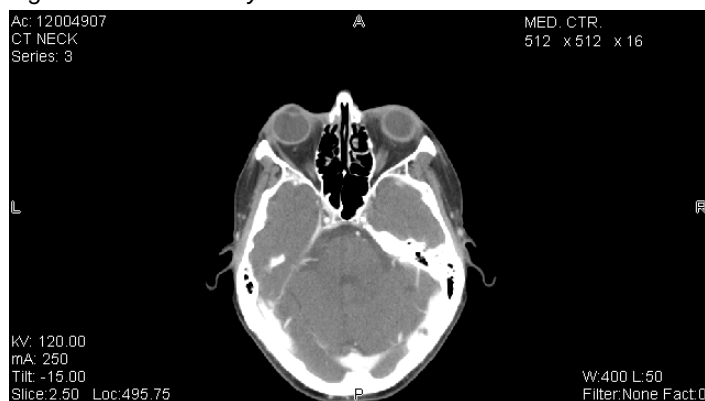
Topic	See Page
Displaying or hiding text overlay	77
Displaying or hiding annotations	79
Displaying or hiding the scale indicator	80
Displaying or hiding cross-reference lines	81
Zooming and panning images	83
Reorienting images	91
Magnifying a region of interest (ROI)	92
Viewing DICOM header information	97

### Displaying or hiding text overlay

Text overlay displays details about an image, and the study and patient to which the image belongs.

Images can be displayed with or without text overlay. In addition, you can specify whether to display all or minimal text overlay. The content and location of text overlay are configured for your site, and may be **modality** specific. For details, contact McKesson Medical Imaging Group.

Figure 5-4 Text overlay



### Restriction for displaying text overlay

Whether text overlay can be displayed depends on the area of the displayed images. The minimal image area for displaying text overlay is configured for your site by McKesson Medical Imaging Group. For example:

- If the image is smaller than the minimal size for displaying all text overlay, Horizon Rad Station displays minimal text overlay.
- If the image is smaller than the minimal size for displaying minimal text overlay, Horizon Rad Station hides text overlay.

The image area is determined by the number of the viewports on the screen and the number of images in the viewport. For details, see [“Setting screen and viewport layout”](#) on page 62.

### Steps for this task

To display or hide text overlay:

- 1 Click the arrow beside the **Overlays** icon on the main toolbar.



- 2 From the menu that is displayed, select the option of your choice. The check mark indicates the currently selected option.

If...	Then...
Displaying all text overlay	Select <b>Full Text</b> .
Displaying minimal text overlay	Select <b>Minimal Text</b> .
Hiding text overlay	Select <b>None</b> .

Alternatively, instead of steps 1-2,

- Right-click an image and point to **Overlays**, and then select the option.

**Note:** Whether the **Overlays** option is displayed on the right-click menu depends on your right-click preferences. See [“Main toolbar preferences”](#) on page 296.

- Use your own [shortcut](#) to display or hide text overlay. To set up a shortcut, see [“Adding and modifying user shortcuts”](#) on page 304.

---

## Displaying or hiding annotations

Images can be displayed with or without **annotations**. For details on annotations, see [“Adding annotations”](#) on page 139.

### Pre-requisite

Before displaying annotations, you need to display **text overlay**. For details, see [“Displaying or hiding text overlay”](#) on page 77.

### Steps for this task

To display or hide annotations:

- 1 Click the **Overlays** icon on the main toolbar.



- 2 From the menu that is displayed, select **Show Annotations**. The check mark beside the option indicates that annotations are currently displayed.

Alternatively, instead of steps 1-2, do one of the following:

- Right-click an image and point to **Overlays**, and then select **Show Annotations**.

---

**Note:** Whether the **Overlays** option is displayed on the right-click menu depends on your right-click preferences. See [“Main toolbar preferences”](#) on page 296.

---

- Use your own **shortcut** to display or hide annotations. To set up a shortcut, see [“Adding and modifying user shortcuts”](#) on page 304.



## Displaying or hiding the scale indicator

The scale indicator indicates the relative size of an image. If the **DICOM header** contains the scale information, images can be displayed with or without the scale indicator.

Figure 5-5 Scale indicator



---

**Note:** If the scale indicator exists, the measurement scale for the image is automatically calibrated. Otherwise, you need to calibrate the measurement scale manually before measuring the image. For details, see [“Calibrating the measurement scale”](#) on page 155.

---

### Steps for this task

To display or hide the scale indicator:

- 1 Click the **Overlays** icon on the main toolbar.



- 2 From the menu that is displayed, select **Show Scale**. The check mark beside the option indicates that the scale indicator is currently displayed.

Alternatively, instead of steps 1-2, do one of the following:

- Right-click an image and point to **Overlays**, and then select **Show Scale**.

---

**Note:** Whether the **Overlays** option is displayed on the right-click menu depends on your right-click preferences. See [“Main toolbar preferences”](#) on page 296.

---

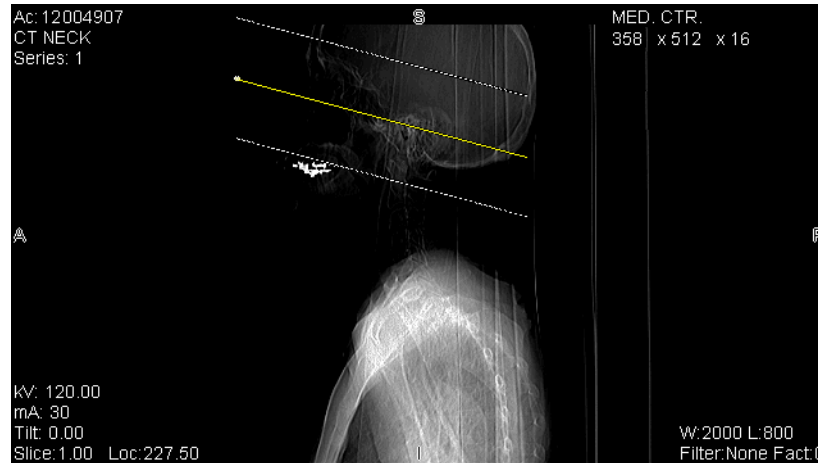
- Use your own [shortcut](#) to display or hide the scale indicator. To set up a shortcut, see [“Adding and modifying user shortcuts”](#) on page 304.

## Displaying or hiding cross-reference lines

Cross-sectional images that share a spatial relationship can be displayed with or without cross-reference lines.

Cross-reference lines indicate the intersecting location of a **series** with respect to its spatially related series. They are typically used as a visual aid when moving through a series, to enable you to view the same **body region** in all displayed series. For details, see “Scrolling through a series” on page 54.

Figure 5-6 Cross-reference lines



### Types of cross-reference lines

The following table describes the three types of cross-reference lines.

Cross-reference line	Meaning
First	Indicates the location of the first image in the series. The first cross-reference line is a dashed line.
Current	Indicates the location of the current image in the series. The current cross-reference line is a solid line.
Last	Indicates the location of the last image in the series. The last cross-reference line is a dashed line.

### Restrictions for displaying the cross-reference lines

The following restrictions exist:

- Whether cross-reference lines can be displayed depends on the angle between the current image and the corresponding slice in the spatially related series. The minimal angle for displaying cross-reference lines is configured for your site by McKesson Medical Imaging Group. If the angle between the current image and the corresponding slice is smaller than the minimal angle, the cross-reference lines are hidden.
- Cross-reference lines are automatically hidden when the images are in Cine mode. For details on the series display modes, see [“Selecting the series display mode”](#) on page 49.

### Steps for this task

To display or hide cross-reference lines:

- 1 Click the image for which you want to display the cross-reference lines.
- 2 Click the arrow beside the **Lines** icon on the main toolbar.



- 3 From the menu that is displayed, select the option of your choice. The check mark indicates the currently selected option.

If...	Then...
Displaying the first, current, and last cross-reference lines	Select <b>All</b> .
Displaying the current cross-reference line only	Select <b>Current Image</b> .
Hiding the cross-reference lines	Select <b>None</b> .

## Zooming and panning images

This section describes how to use the Horizon Rad Station zoom and pan tools.

### In this section

This section contains the following topics:

Topic	See Page
About zooming and panning	83
Specifying the zoom and pan scope	83
Zooming images	85
Calibrating monitors for life size image display	87
Panning images	89
Displaying and hiding the image map	90

### About zooming and panning

You can view a region of interest (ROI) by zooming and panning an image:

- Zooming changes the magnification of an image. You can zoom images in a [viewport](#) or a separate window. For details, see [“Zooming images”](#) on page 85.
- Panning enables you to move through the zoomed area. For details, see [“Panning images”](#) on page 89.

### Specifying the zoom and pan scope

The zoom and pan scope determines the extent to which [zooming](#) and/or [panning](#) are applied. For an overview of zooming and panning, see [“About zooming and panning”](#) on page 83.

### Available zoom and pan scopes

The following table describes the available zoom and pan scopes in Horizon Rad Station.

Zoom and pan scope	Meaning
Selected images	Applying zooming and/or panning to selected images.
Selected series	Applying zooming and/or panning to images in the selected series.
All visible series	Applying zooming and/or panning to images in all <a href="#">series</a> that are displayed.

## Steps for this task

To specify the zoom and pan scope:

- 1 Do one of the following:
  - Click the **Zoom** icon on the main toolbar.

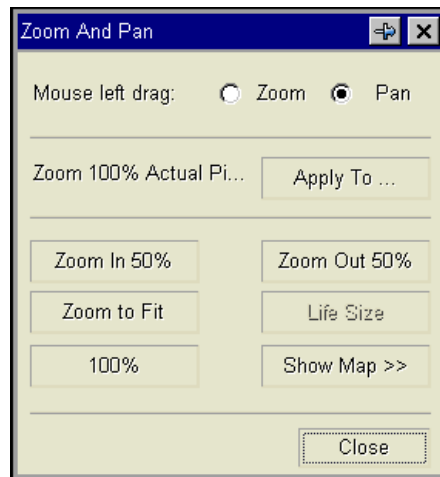


- Click the **Pan** icon on the main toolbar.



The **Zoom And Pan** panel is displayed.

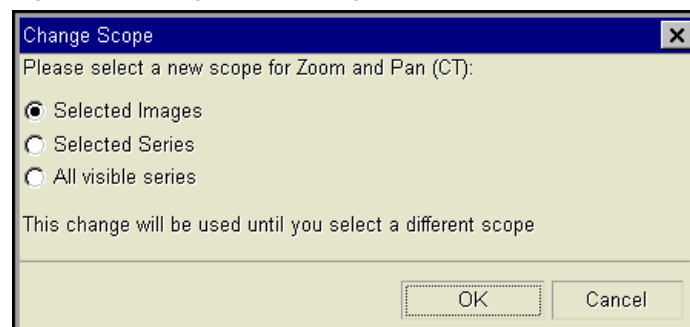
Figure 5-7 Zoom And Pan panel



- 2 Click **Apply To**.

The **Change Scope** dialog box is displayed.

Figure 5-8 Change Scope dialog box



- 3 Select the zoom and pan scope. For details, see [“Available zoom and pan scopes”](#) on page 83.
- 4 Click **OK**.

## Zooming images

You can zoom images in one of the following ways:

- Select a zoom option
- Use the mouse
- Match the region of interest (ROI) of all displayed images to the last selected image

Alternatively, use your own [shortcuts](#) to zoom images. To set up shortcuts, see [“Adding and modifying user shortcuts”](#) on page 304.

---

**Note:** You can also zoom images in a [Zoom window](#) or [Survey window](#). For details, See [“Displaying a series in a separate window”](#) on page 46.

---

## Zoom options

The following table describes the available zoom options.

Zoom option	Meaning
Zoom in 50%	Zoom the images to 50% larger than the current size.
Zoom out 50%	Zoom the images to 50% smaller than the current size.
Zoom to Fit	Zoom the images to fit the <a href="#">viewport</a> .
Life Size	<p>Display the images at their true physical size.</p> <hr/> <p><b>Note:</b> This option is not available if the images do not contain a measurement scale, or the monitors are not calibrated for life size image display. For details, see <a href="#">“Calibrating the measurement scale”</a> on page 155 and <a href="#">“Calibrating monitors for life size image display”</a> on page 87.</p> <hr/>
50%	Display the images at 50% of the original image size.
100%	Display the images at the original image size.
200%	Display the images at 200% of the original image size.

---

**Note:** The **50%** and **200%** options are not available in the **Zoom And Pan** panel ([Figure 5-7](#) on page 84).

---

## Selecting a zoom option

To zoom images by selecting a zoom option:

- 1 Specify the zoom and pan scope. See “[Specifying the zoom and pan scope](#)” on page 83.
- 2 Click the image you want to zoom.
- 3 Click the **Zoom** icon on the main toolbar.



The **Zoom And Pan** panel is displayed. See *Figure 5-7* on page 84.

- 4 Select the zoom option. For details, see “[Zoom options](#)” on page 85.

Alternatively, instead of steps 3-4, do one of the following:

- Click the arrow beside the **Zoom** icon on the main toolbar, and then select the zoom option.
- Right-click the image you want to zoom, point to **Zoom**, and then select the zoom option.

---

**Note:** Whether the **Zoom** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

---

The images within the zoom and pan scope are zoomed accordingly.

## Using the mouse

To use the mouse to zoom images:

- 1 Click the image you want to zoom.
- 2 Click the **Zoom** icon on the main toolbar.



The **Zoom And Pan** panel is displayed. See *Figure 5-7* on page 84.

Alternatively, do one of the following:

- Click the arrow beside the **Zoom** icon on the main toolbar, and then select **Interactive Zoom**.
- Instead of steps 1-2, right-click the image you want to zoom, point to **Zoom**, and then select **Interactive Zoom**.

---

**Note:** Whether the **Zoom** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

---

- 3 Specify the zoom and pan scope. See “[Specifying the zoom and pan scope](#)” on page 83.
- 4 **Drag** the mouse up and down.

- 5 Release the left mouse button.

The images within the zoom and pan scope are zoomed accordingly.

### Matching the ROI of all displayed images to the last selected image

If the last selected image contains spatial information, you can zoom all displayed images to match the ROI of the last selected image.

To match the ROI of all displayed images to the last selected image:

- 1 Click the arrow beside the **Zoom** icon on the main toolbar.



- 2 From the menu that is displayed, select **Match ROI**.

Alternatively, instead of steps 1-2, right-click the last selected image, point to **Zoom**, and then select **Match ROI**.

---

**Note:** Whether the **Zoom** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

---

### Calibrating monitors for life size image display

Displaying images at life size enables you to clearly visualize the anatomy at its physical size. The monitors are calibrated for life size image display at installation by McKesson Medical Imaging Group. You may also re-calibrate the monitors at anytime.

### Restriction for calibrating monitors for life size image display

You must have the authority to calibrate monitors for life size image display. For details, contact your system administrator.

### Pre-requisite

You need a ruler that can be placed flat on the monitor.

### Steps for this task

To calibrate a monitor at life size:

- 1 Click the arrow beside the **Zoom** icon on the main toolbar.



- 2 From the menu that is displayed, select **Calibrate Monitor for Life Size**.

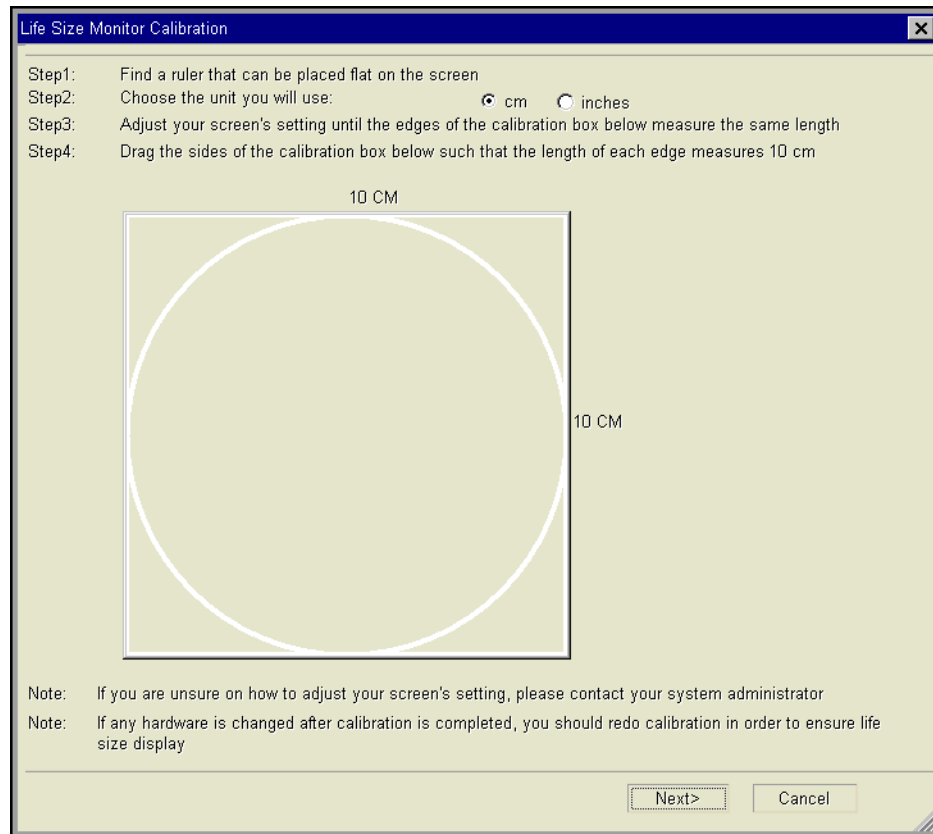


Alternatively, instead of steps 1-2, right-click an image and point to **Zoom**, and then select **Calibrate Monitor for Life Size**.

**Note:** Whether the **Zoom** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

The **Life Size Monitor Calibration** dialog box is displayed.

Figure 5-9 Life Size Monitor Calibration dialog box



- 3 Calibrate the monitor as follows:
  - Specify the measurement unit you want to use for calibration. The available options are **cm** or **inches**.
  - Drag the lower right corner of the **Life Size Monitor Calibration** dialog box, until the sides of the calibration box (the box that contains a circle) have the same length.
  - **Drag** the calibration box, until the length of each side is the same as the indicated measurement (10 cm or 5 inches).
- 4 Click **Next**.
- 5 If the workstation has multiple monitors, the **Life Size Monitor Calibration** dialog box is displayed on the next monitor. Repeat steps 3-4 for each monitor.
- 6 Click **Finish**.

## Panning images

Panning a zoomed image enables you to view a different a region of interest (ROI). You can pan images from:

- The **Zoom And Pan** panel (*Figure 5-7* on page 84)
- The image map. The image map is a representation of the selected image. For details, see “[Displaying and hiding the image map](#)” on page 90.

Alternatively, use your own [shortcut](#) to pan images. To set up a shortcut, see “[Adding and modifying user shortcuts](#)” on page 304.

### Restriction for panning images

Images displayed in a [Zoom window](#) or [Survey window](#) cannot be panned. For details, see “[Zoom window and Survey window](#)” on page 46.

### Panning images from the Zoom And Pan panel

To pan images from the Zoom And Pan panel:

- 1 Click the zoomed image that you want to pan.
- 2 Click the **Pan** icon on the main toolbar.



The **Zoom and Pan** panel is displayed. See *Figure 5-7* on page 84.

Alternatively, do one of the following:

- Right-click the image, and then select **Pan**.

---

**Note:** Whether the **Zoom** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

---

- Use your own [shortcuts](#) to display the **Zoom and Pan** panel. To set up shortcuts, see “[Adding and modifying user shortcuts](#)” on page 304.
- 3 Specify the zoom and pan scope. See “[Specifying the zoom and pan scope](#)” on page 83.
  - 4 [Drag the mouse pointer](#), to display the new ROI.

The new ROI is displayed on images within the zoom and pan scope.

### Panning images from the image map

To pan images from the image map:

- 1 Click the zoomed image that you want to pan.
- 2 Display the image map. See “[Displaying and hiding the image map](#)” on page 90.
- 3 Specify the zoom and pan scope. See “[Specifying the zoom and pan scope](#)” on page 83.

- 4 On the image map, click the location of the new ROI.

The new ROI is displayed on images within the zoom and pan scope.

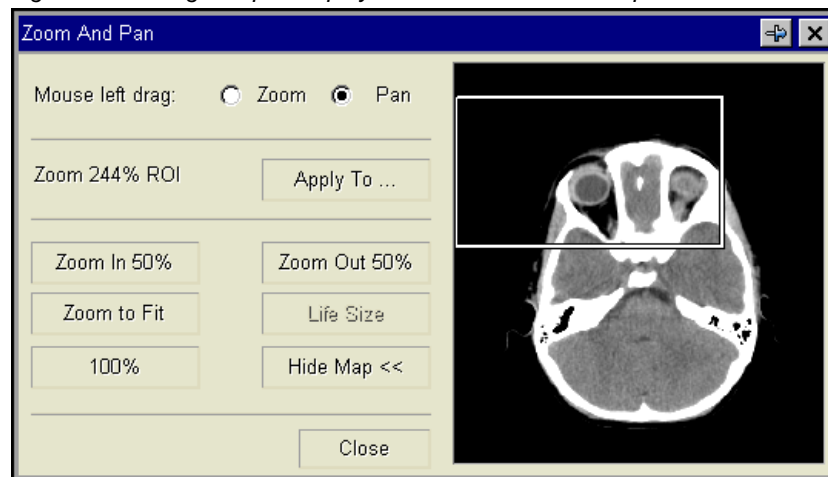
## Resetting the Zoom/Pan settings

You can reset the Zoom/Pan settings of a **series**, so that the images within it are zoomed to fit the **viewport**. In addition, other presentation settings are reset simultaneously. See “Resetting the series presentation” on page 136.

## Displaying and hiding the image map

The image map is a visual aid for **zooming** and **panning** images. It serves as a representation of the selected image. If the selected image contains **annotations**, the annotations are also displayed.

Figure 5-10 Image map is displayed in the Zoom and Pan panel



The region of interest (ROI) is indicated by a rectangle with a solid border. You can pan the ROI directly from the image map. See “Panning images from the image map” on page 89.

## Steps for this task

To display or hide the image map:

- 1 Click the image whose image map you want to display or hide.
- 2 Do one of the following, to display the **Zoom And Pan** panel (Figure 5-7 on page 84):
  - Click the **Zoom** icon on the main toolbar.



- Click the **Pan** icon on the main toolbar.



- 3 Do one of the following:

If...	Then...
Displaying the image map	Click <b>Show Map</b> .
Hiding the image map	Click <b>Hide Map</b> .

The image map is displayed or hidden accordingly.

## Reorienting images

You can rotate and/or flip an image to view it from a different angle. When you rotate and/or flip an image, all the images within that series are adjusted accordingly.

---

**Note:** You can also reset the image orientation of a series, so that the images within it are displayed with the standard orientation. In addition, other presentation settings are reset simultaneously. See [“Resetting the series presentation”](#) on page 136.

---

### Restriction for reorienting images

If a [series](#) is displayed in multiple [viewports](#), the same image cannot have different rotations in different viewports.

### Rotating an image

To rotate an image:

If...	Then...
Rotating the image 90° to the left (counter-clockwise)	Right-click the image you want to rotate, point to <b>Re-Orient</b> , and then select <b>Rotate Counter-Clockwise</b> .
Rotating the image 90° to the right (clockwise)	Right-click the image you want to rotate, point to <b>Re-Orient</b> , and then select <b>Rotate Clockwise</b> .

---

**Note:** Whether the **Re-Orient** option is displayed on the right-click menu depends on your right-click preferences. See [“Main toolbar preferences”](#) on page 296.



---

Alternatively, use your own [shortcuts](#) to rotate the selected image. To set up a shortcut, see [“Adding and modifying user shortcuts”](#) on page 304.

## Flipping an image

To flip an image:

- 1 Click the image.
- 2 Flip the image as follows:

If...	Then...
Flipping the image horizontally, as if viewing it in a mirror	Click the <b>Flip Hx</b> icon on the main toolbar. 
Flipping the image vertically, as if viewing it upside down	Click the <b>Flip Vt</b> icon on the main toolbar. 

Alternatively, instead of steps 1-2, do one of the following:

- Right-click the image and point to **Re-Orient**, and then select **Flip Horizontal** or **Flip Vertical**.

---

**Note:** Whether the **Re-Orient** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

---

- Use your own [shortcuts](#) to flip the selected image. To set up a shortcut, see “[Adding and modifying user shortcuts](#)” on page 304.

The image is flipped accordingly. The adjusted orientation is applied to all images within the series.

## Magnifying a region of interest (ROI)

You can use the Magnifying Glass, to magnify a small area of an image. As a result, the region of interest (ROI) can be reviewed in detail. Typically, the Magnifying Glass is used for [CR](#) studies.

In addition, you can:

- Adjust the size of the Magnifying Glass and the zoom multiplier value

---

**Note:** The magnification factor of the Magnifying Glass is obtained by applying the zoom multiplier value to the image zoom ratio. For example, if the glass zoom multiplier value is 2, and the image zoom ratio is 75%, the Magnifying Glass shows the ROI at 150% of its original size. For details on image zoom ratio, see “[Zooming and panning images](#)” on page 83.

---

- Apply one of the following [Window/Level](#) values to the ROI:
  - Window/Level specified for the image
  - Window/Level estimated for the ROI (See [“Estimate Window/Level”](#) on page 110)
- Apply post processing to the ROI (See [“About post processing”](#) on page 132)

## Restrictions for magnifying a ROI

The following restrictions exist:

- The Magnifying Glass cannot be used when the images are in Cine mode. For details on the series display modes, see [“Selecting the series display mode”](#) on page 49.
- [Annotations](#) on the magnified image are not displayed.

## Steps for this task

To magnify a ROI:

- 1 Click the image
- 2 Click the **Glass** icon on the main toolbar.



Alternatively, do one of the following:

- Instead of steps 1-2, right-click the image, and then select **Magnifying Glass**.

---

**Note:** Whether the **Magnifying Glass** option is displayed on the right-click menu depends on your right-click preferences. See [“Main toolbar preferences”](#) on page 296.

---

- Use your own [shortcut](#) to magnify a ROI. To set up a shortcut, see [“Adding and modifying user shortcuts”](#) on page 304.

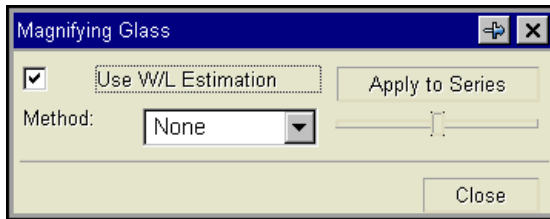
The Magnifying Glass is placed on the center of the image.

Figure 5-11 Magnifying Glass on the image

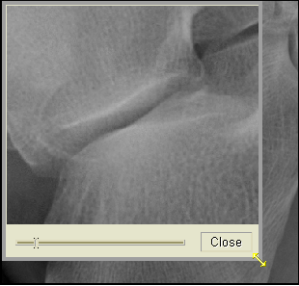
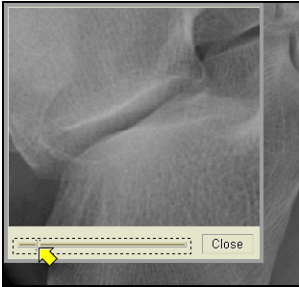


In addition, the **Magnifying Glass** dialog box is displayed.

Figure 5-12 Magnifying Glass dialog box



## 3 Optionally, adjust the Magnifying Glass properties:

If...	Then...
Adjusting the size of the Magnifying Glass	<p><b>Drag</b> the edge of the Magnifying Glass, then release the mouse button.</p>  <p><b>Note:</b> Changing the size of the Magnifying Glass enables you to adjust the size of the ROI. It does not relocate the center point of the Magnifying Glass, or change the zoom multiplier value.</p>
Adjusting the glass zoom multiplier value	<p>Drag the slider under the Magnifying Glass, in the appropriate direction:</p> <ul style="list-style-type: none"> <li>• To increase the zoom multiplier value, drag the slider to the right</li> <li>• To decrease the zoom multiplier value, drag the slider to the left</li> </ul>  <p><b>Note:</b> Changing the zoom multiplier value does not relocate the center point of the Magnifying Glass.</p>



- 4 In the **Magnifying Glass** dialog box (*Figure 5-12* on page 94), specify the **Window/Level** to apply to the ROI:

If...	Then...
Applying the Estimate Window/Level	<ol style="list-style-type: none"> <li>1 Select the <b>Use W/L Estimation</b> check box.</li> <li>2 To apply the Estimate Window/Level to all images in the series, click <b>Apply to Series</b>.</li> </ol>
Applying the image Window/Level	Clear the <b>Use W/L Estimation</b> check box.

- 5 In the **Magnifying Glass** dialog box (*Figure 5-12* on page 94), apply post processing to the ROI, or remove post processing from it:

If...	Then...
Applying post processing to the ROI	<ol style="list-style-type: none"> <li>1 Click the <b>Method</b> box, and select <b>Sharp-Smooth</b>.</li> <li>2 Sharpen or smoothen the ROI as follows: <ul style="list-style-type: none"> <li>• To sharpen the ROI, drag the slider to the left.</li> <li>• To smoothen the ROI, drag the slider to the right.</li> </ul> </li> </ol>
Removing post processing from the ROI	Click the <b>Method</b> box, and select <b>None</b> .

- 6 Drag the Magnifying Glass around, to review the ROI. To magnify a ROI on another image, drag the Magnifying Glass to that image.
- 7 Click **Close**.

## Viewing DICOM header information

DICOM files contain information about a study and the images it contains. A DICOM file is generated by the **image device**, when the images are captured. Each DICOM file contains two parts:

- DICOM header, which contains all the patient and study data associated with the image
- Other Image Data, which conveys the **pixel** information

### Steps for this task

To view DICOM header information for an image:

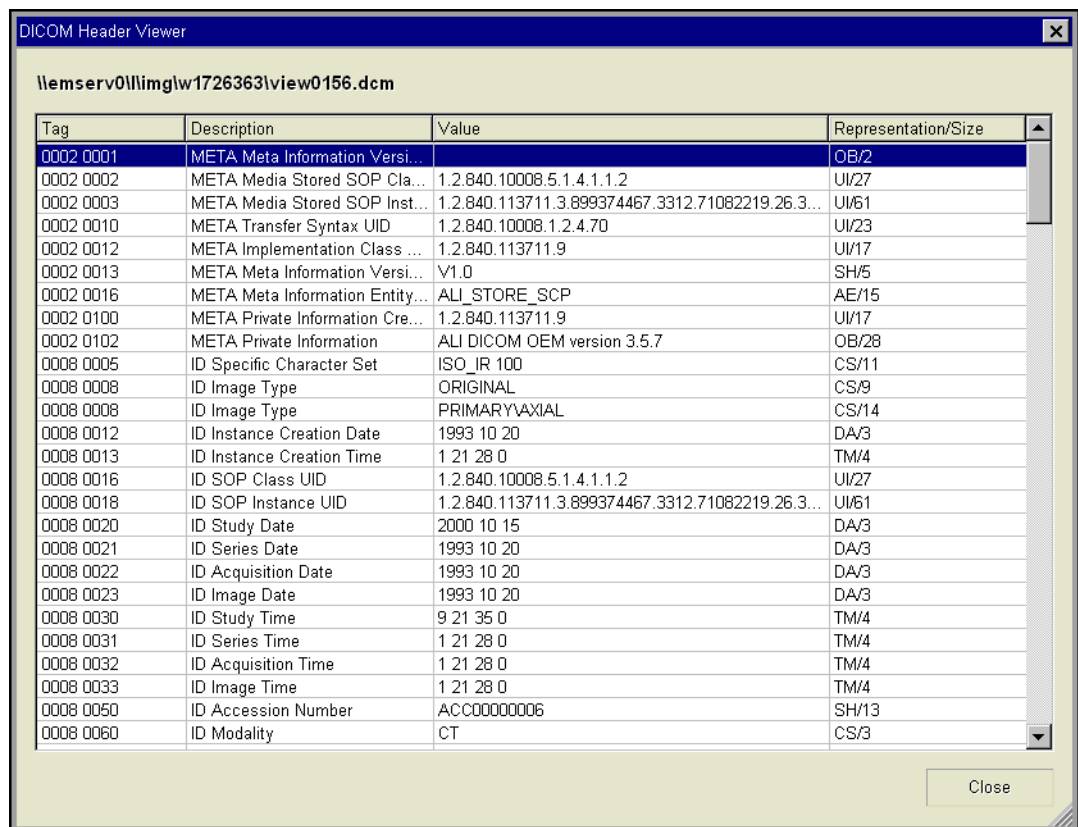
- 1 Right-click the image and point to **Info**, and then select **DICOM Header Viewer**.

**Note:** Whether the **Info** option is displayed on the right-click menu depends on your right-click preferences. See “**Main toolbar preferences**” on page 296.

Alternatively, use your own **shortcut** to view DICOM header information. To set up a shortcut, see “**Adding and modifying user shortcuts**” on page 304.

The **DICOM Header Viewer** is displayed, listing the DICOM header information.

Figure 5-13 DICOM Header Viewer



Tag	Description	Value	Representation/Size
0002 0001	META Meta Information Versi...		OB/2
0002 0002	META Media Stored SOP Cla...	1.2.840.10008.5.1.4.1.1.2	UI/27
0002 0003	META Media Stored SOP Inst...	1.2.840.113711.3.899374467.3312.71082219.26.3...	UI/61
0002 0010	META Transfer Syntax UID	1.2.840.10008.1.2.4.70	UI/23
0002 0012	META Implementation Class ...	1.2.840.113711.9	UI/17
0002 0013	META Meta Information Versi...	V1.0	SH/5
0002 0016	META Meta Information Entity...	ALI_STORE_SCP	AE/15
0002 0100	META Private Information Cre...	1.2.840.113711.9	UI/17
0002 0102	META Private Information	ALI DICOM OEM version 3.5.7	OB/28
0008 0005	ID Specific Character Set	ISO_IR 100	CS/11
0008 0008	ID Image Type	ORIGINAL	CS/9
0008 0008	ID Image Type	PRIMARY/AXIAL	CS/14
0008 0012	ID Instance Creation Date	1993 10 20	DA/3
0008 0013	ID Instance Creation Time	1 21 28 0	TM/4
0008 0016	ID SOP Class UID	1.2.840.10008.5.1.4.1.1.2	UI/27
0008 0018	ID SOP Instance UID	1.2.840.113711.3.899374467.3312.71082219.26.3...	UI/61
0008 0020	ID Study Date	2000 10 15	DA/3
0008 0021	ID Series Date	1993 10 20	DA/3
0008 0022	ID Acquisition Date	1993 10 20	DA/3
0008 0023	ID Image Date	1993 10 20	DA/3
0008 0030	ID Study Time	9 21 35 0	TM/4
0008 0031	ID Series Time	1 21 28 0	TM/4
0008 0032	ID Acquisition Time	1 21 28 0	TM/4
0008 0033	ID Image Time	1 21 28 0	TM/4
0008 0050	ID Accession Number	ACC000000006	SH/13
0008 0060	ID Modality	CT	CS/3

- 2 Click **Close**.

## Creating MPR images

This section describes how to create Multi-Planar Reconstruction (MPR) images.

**Note:** MPR images cannot be saved in Horizon Rad Station Distributed. For details on saving MPR images using Horizon Rad Station Advanced, refer to the *Horizon Rad Station Advanced User's Guide*.

### In this section

This section contains the following topics:

Topic	See Page
<a href="#">About creating MPR images</a>	98
<a href="#">Step 1: Specifying the MPR range</a>	99
<a href="#">Step 2: Creating the MPR images</a>	102

## About creating MPR images

Multi-Planar Reconstruction (MPR) enables you to view cross-sectional [series](#) in an orthogonal plane other than the original one.

### Orthogonal planes

The following table describes the planes in which you can create MPR images.

Plane	Description
Axial	This plane runs parallel to the ground, dividing the standing body into top and bottom sections.
Coronal	This plane runs perpendicular to the ground, dividing the standing body into front and back sections.
Sagittal	This plane runs perpendicular to the ground, dividing the standing body into right and left sections.

### Two ways to create MPR images

MPR images can be automatically created in one of the following situations:

- The [display protocol](#) currently applied to the study specifies to create MPR images for a particular viewport. For details, see [“About display protocols”](#) on page 212.
- When a [Bookmark](#) is applied to the study, and the Bookmark contains saved MPR information. For details, see [“Understanding Bookmarks”](#) on page 180.

In addition, you can manually create MPR images. See the following topics:

- [“Step 1: Specifying the MPR range”](#) on page 99
- [“Step 2: Creating the MPR images”](#) on page 102

## Manipulating MPR images

You can perform the following tasks to MPR images:

- Change the viewport layout (See [“Setting the viewport layout”](#) on page 63)
- Move through the images (See [“Navigating a series”](#) on page 54)
- Link images (See [“Working with linked series”](#) on page 64)
- Select images (See [“Selecting and deselecting images”](#) on page 74)
- Display selected images only (See [“Specifying the series viewing scope”](#) on page 51)
- Zoom and pan images (See [“Zooming and panning images”](#) on page 83)
- Rotate and flip images (See [“Reorienting images”](#) on page 91)
- Magnify a small area of the images (See [“Magnifying a region of interest \(ROI\)”](#) on page 92)
- Adjust **Window/Level** (See [“Adjusting the Window/Level values”](#) on page 109)
- Apply post processing to images (See [“Applying post processing”](#) on page 132)
- Add temporary **annotations** (See [“Persistent vs. temporary annotations”](#) on page 139, [“Annotating images”](#) on page 144, and [“Measuring images”](#) on page 153)
- Play the MPR images as a **cine clip** (See [“Playing cine clips”](#) on page 188)

## Saving MPR images

The MPR images you create cannot be saved. The images are deleted when you close the study.

## Step 1: Specifying the MPR range

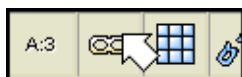
You can specify the range from which to **create Multi-Planar Reconstruction (MPR) images**. If the MPR range is not specified, the entire series is used.

For an overview of MPR images, see [“About creating MPR images”](#) on page 98.

## Setting the MPR start range

To set the MPR start range:

- 1 Click the first image for creating MPR images.
- 2 Click the **Display Mode** icon at the top of the viewport. The **Display Mode** icon indicates the types of images currently displayed. For details, see [“Specifying the series viewing scope”](#) on page 51.



- 3 From the menu that is displayed, point to **Advanced**, and then select **Start 3D/MPR Range Marker**.

Alternatively, instead of steps 1-3, do one of the following:

- Right-click the first image and point to **3D/MPR**, and then select **Start 3D/MPR Range Marker**.

---

**Note:** Whether the **3D/MPR** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

---

- Use your own [shortcut](#) to set the MPR start range. To set up a shortcut, see “[Adding and modifying user shortcuts](#)” on page 304.

## Setting the MPR end range

To set the MPR end range:

- 1 Click the last image for creating MPR images.
- 2 Click the **Display Mode** icon at the top of the viewport.
- 3 From the menu that is displayed, point to **Advanced**, and then select **End 3D/MPR Range Marker**.

Alternatively, instead of steps 1-3, do one of the following:

- Right-click the last image and point to **3D/MPR**, and then select **End 3D/MPR Range Marker**.

---

**Note:** Whether the **3D/MPR** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

---

- Use your own [shortcut](#) to set the MPR end range. To set up a shortcut, see “[Adding and modifying user shortcuts](#)” on page 304.

## Clearing the MPR range

To clear the MPR range:

- 1 Click the viewport.
- 2 Click the **Display Mode** icon at the top of the viewport.



- 3 From the menu that is displayed, point to **Advanced**, and then select **Clear 3D/MPR Range Markers**.

Alternatively, instead of steps 1-3, do one of the following:

- Right-click the last image and point to **3D/MPR**, and then select **Clear 3D/MPR Range Markers**.

---

**Note:** Whether the **3D/MPR** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

---

- Use your own [shortcut](#) to clear the MPR range. To set up a shortcut, see “[Adding and modifying user shortcuts](#)” on page 304.

## Step 2: Creating the MPR images

After [specifying the MPR range](#), you can create the [MPR images](#).

### Steps for this task

To create the MPR images:

- 1 Click the **Display Mode** icon at the top of the viewport.



The **Display Mode** icon indicates the types of images currently displayed. For details, see [“Specifying the series viewing scope”](#) on page 51.

- 2 From the menu that is displayed, select the plane in which you want to create the images. See [“Orthogonal planes”](#) on page 98.

Alternatively, instead of steps 1-2, do one of the following:

- Right-click the viewport and point to **3D/MPR**, and then select the plane in which you want to create the images.

---

**Note:** Whether the **3D/MPR** option is displayed on the right-click menu depends on your right-click preferences. See [“Main toolbar preferences”](#) on page 296.

---

- Use your own [shortcuts](#) to create the MPR images. To set up shortcuts, see [“Adding and modifying user shortcuts”](#) on page 304.

The MPR images are created accordingly. If the **Valid Image Subset Selection** dialog box is displayed, see [“Selecting a subset”](#) on page 102.

### Selecting a subset

When you [create MPR images](#), Horizon Rad Station checks for non-uniform images in the [series](#). Images are considered non-uniform when they have the following properties:

- Different orientation, for example, an image in the series is displayed in a different position when compared to the rest of the series (for example, the image has been flipped or rotated).
- Different slice thickness
- Irregular spacing, which results in gaps between the slices.

Non-uniform images cannot be used to create MPR images. As a result, Horizon Rad Station identifies subsets that contain uniform images. You can select the subset from which you want to create MPR images.

## Steps for this task

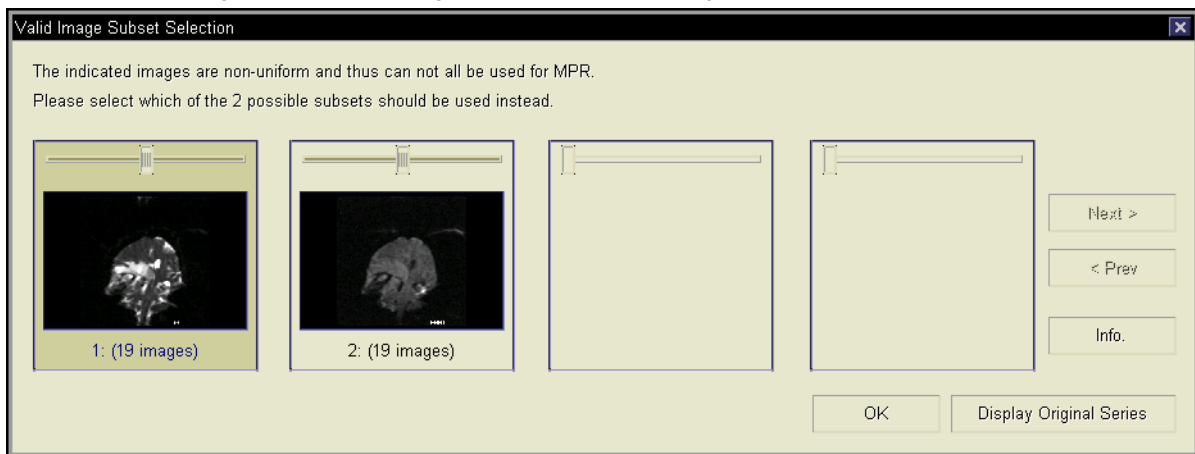
To select a subset:

- 1 In the **Valid Image Subset Selection** dialog box (*Figure 5-14*), click the subset from which you want to create MPR images.

If there are more than four subsets, you can page through the subsets, by clicking **Next** and **Previous**.

**Note:** The slider on top of each thumbnail indicates where the corresponding image is located within the series. To view a different image, **drag** the slider to a different position. Alternatively, you can scroll through the subset, by placing the **mouse pointer** on the thumbnail and rotating the mouse wheel.

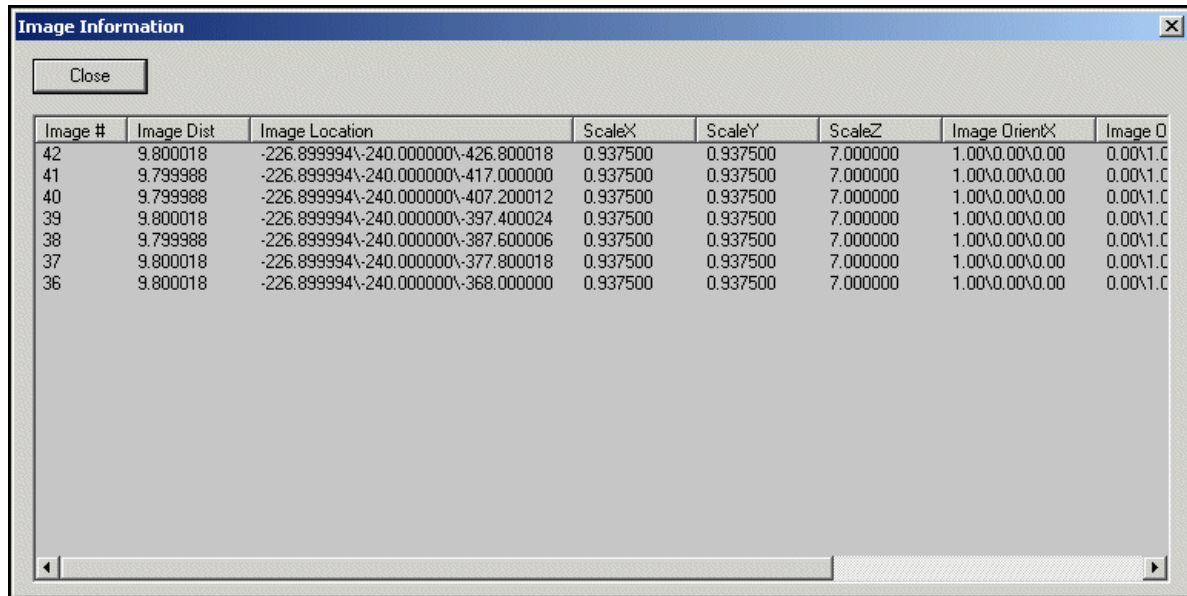
Figure 5-14 Valid Image Subset Selection dialog box



- 2 Optionally, to view the information about the images in the subset, do the following:
  - Click the subset, and then click **Info**.
  - The **Image Information** dialog box is displayed. When you finish viewing the information, click **Close**.



Figure 5-15 Image Information dialog box



- 3 Click **OK**. The MPR images are created accordingly.

---

## Changing the image contrast and brightness

This section describes how to change the image contrast and brightness.

### In this section

This section contains the following topics:

<b>Topic</b>	<b>See Page</b>
About image contrast and brightness	106
Specifying the Window/Level scope	107
Adjusting the Window/Level values	109
Selecting a LUT function to apply	117
Optimizing image presentation with non-linear LUT functions	119
Displaying and hiding the histogram and LUT function graph	124
Managing Window/Level presets	126
Inverting the image contrast	131
Applying post processing	132

## About image contrast and brightness

This sections describes the concepts of Look-Up Tables (LUTs), Window/Level values, and intensity unit.

### In this section

This section contains the following topics:

Topic	See Page
<a href="#">Understanding Look-Up Tables and Window/Level values</a>	106
<a href="#">Understanding the intensity unit</a>	107

### Understanding Look-Up Tables and Window/Level values

Adjusting the image contrast and brightness enables you to review a particular pathology. You can also adjust the contrast and brightness of **US** images, to compensate for poor gain settings when the images were captured.

The image contrast and brightness are determined by the following factors:

- The Look-Up Table (LUT) function, which is used to display the image on the screen
- The Window/Level values of the image

You can specify the extent to which Window/Level values and LUT function are applied. For details, see [“Specifying the Window/Level scope”](#) on page 107.

### How Look-Up Tables are used

An image is composed of a large number of **pixels**, each corresponding to a point in the image. When displaying images on the screen, Horizon Rad Station uses a Look-Up Table (LUT) function to map the image pixel values to the display values. For **grayscale** images, the display value is the relative brightness. As a result, the pixels are displayed on the screen with different brightness and contrast.

You can adjust the image contrast and brightness by applying different LUTs. See [“Selecting a LUT function to apply”](#) on page 117.

---

**Note:** The pixel values for **CT** and **CR/DR/DX** images are converted to pixel intensity values. For details, see [“Understanding the intensity unit”](#) on page 107.

---

### Understanding Window/Level

Window and Level are **image processing** parameters that define how captured image intensities are displayed on the screen.

The display values of displayed images lie in a particular range. This range determines the brightness of the **pixels**:

- All pixels with a value below this range are black

- All those with a value above this range are white
- All pixels within this smaller range are shades of grey

The range of 0-255 is the range within which the human eyes can detect noticeable luminance changes. A smaller range can be used to display certain features in an image more clearly. For example, if this “sub” range was from 100 to 150, then all pixels with values less than 100 would appear black, while all those with values greater than 150 would appear white. Pixels between 100 and 150 would appear grey.

Window and Level relate directly to this “sub” range of pixel values:

- Window is the total width of the sub-range (50 in the above example). Window controls the contrast of an image.
- Level is the average (middle) value of the sub-range (125 in the above example). Level controls the brightness of an image.

You can adjust the image contrast and brightness, by adjusting the Window/Level. See [“Adjusting the Window/Level values”](#) on page 109.

## Understanding the intensity unit

For CT and CR/DR/DX images, their pixel values are converted to pixel intensity values.

The following table describes the two intensity units.

Intensity unit	Meaning
Hounsfield Unit (HU)	Conveys the relative density of a pixel value compared to water. HU is the intensity unit for CT images.
Optical Density (OD)	Conveys the opacity of a pixel. OD is the intensity unit for CR/DR/DX images.

## Use of the pixel intensity values

Different tissue types have unique density and opacity ranges. As a result, pixel intensity values can indicate the tissue types of a region of interest (ROI). For example, you can measure the pixel intensity value of an Elliptical ROI or a point, to examine whether there is water in the ROI. For procedures, see [“Adding and measuring the Elliptical Region of Interest \(ROI\)”](#) on page 160 and [“Measuring the pixel intensity of a point”](#) on page 162.

## Specifying the Window/Level scope

The Window/Level scope determines the extent to which Window/Level values and LUT function are applied. For details on Window/Level values and LUT functions, see [“Understanding Look-Up Tables and Window/Level values”](#) on page 106.

## Available Window/Level scopes

The following table describes the available Window/Level scopes in Horizon Rad Station.

Window/Level scope	Meaning
Selected images	Apply the Window/Level values and LUT function to selected images.
Selected series	Apply the Window/Level values and LUT function to images in the selected <b>series</b> .
All visible series	Apply the Window/Level values and LUT function to images in all series that are displayed.

## Steps for this task

To specify the Window/Level scope:

- 1 Click the **W/L** icon on the main toolbar.



The **Window/Level** panel is displayed. See *Figure 5-16*.

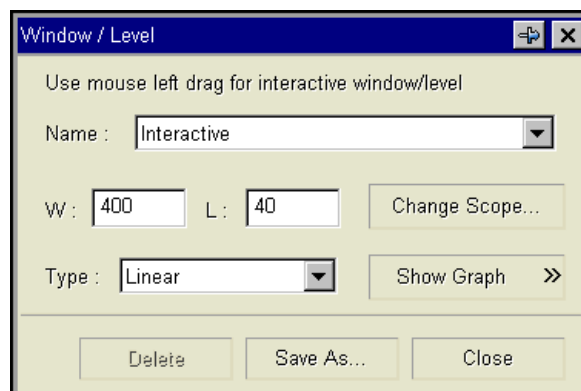
Alternatively, do one of the following:

- Click the arrow beside the **W/L** icon on the main toolbar, and then select **Interactive W/L**.
- Right-click the image whose Window/Level values you want to adjust, point to **Window/Level**, and then select **Interactive W/L**.

**Note:** Whether the **Window/Level** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

- Use your own **shortcuts** to display the **Window/Level** panel. To set up shortcuts, see “[Adding and modifying user shortcuts](#)” on page 304.

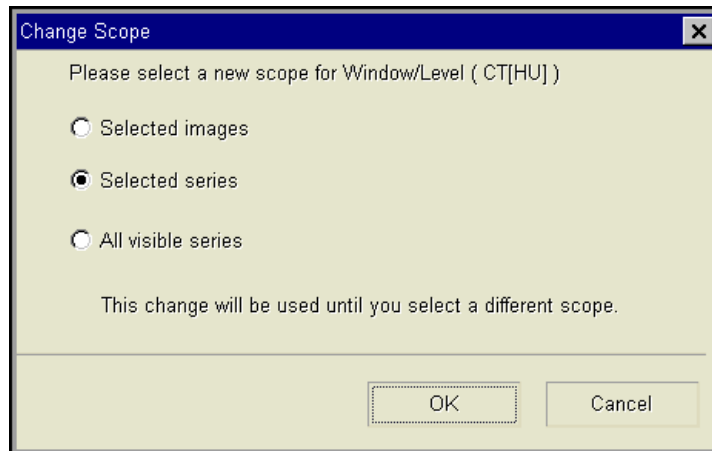
*Figure 5-16 Window/Level panel*



- 2 Click **Change Scope**.

The **Change Scope** dialog box is displayed.

Figure 5-17 Change Scope dialog box



- 3 Select the Window/Level scope. For details, see [“Available Window/Level scopes”](#) on page 108.
- 4 Click **OK**.

## Adjusting the Window/Level values

This section describes how to adjust the Window/Level values of images.

### In this section

This section contains the following topics:

Topic	See Page
<a href="#">Types of Window/Level values</a>	110
<a href="#">Applying Window/Level values</a>	111
<a href="#">Applying a Window/Level preset</a>	113
<a href="#">Adjusting the Window/Level values interactively</a>	115
<a href="#">Entering the new Window/Level values</a>	116
<a href="#">Resetting the Window/Level values</a>	116

## Types of Window/Level values

There are four types of **Window/Level** values in Horizon Rad Station:

- Source Window/Level
- Estimate Window/Level
- Default Window/Level
- Window/Level presets

To apply one of these Window/Level values, use the **Window/Level** panel (*Figure 5-16* on page 108), the **main toolbar**, or the right-click menu. For details, see “**Applying Window/Level values**” on page 111.

### Source Window/Level

A Source Window/Level contains the **Window/Level** values and/or Look-Up Table (LUT) functions provided by the **image device**. The values are stored in the **DICOM header**. Up to six Source Window/Level values and LUT functions can be stored.

- If there is one Source Window/Level or LUT function, **Source** is listed.
- If there are multiple Source Window/Level values and/or LUT functions, **Source 1**, **Source 2**, and so on are listed. An asterisk (\*) appended to the number indicates that the Source Window/Level is specific for the **modality**, image device, and/or image type.

### Estimate Window/Level

The Estimate Window/Level contains the **Window/Level** values estimated based on histogram analysis of the image. For details on the histogram, see “**Displaying and hiding the histogram and LUT function graph**” on page 124.

Use the Estimate Window/Level when the values provided by the **image device** do not produce an optimal image presentation. It is listed as **Estimate**.

---

**Note:** Window/Level values can also be estimated for and applied to a small, magnified area of an image. See “**Magnifying a region of interest (ROI)**” on page 92.

---

### Default Window/Level

The Default Window/Level contains the **Window/Level** values determined by the system. It is perceived as the best available Window/Level for the images.

The Default Window/Level is determined by the following factors:

If...	Then...
Saved <b>Stored Image Presentations (SIPs)</b> for the study exist	The Window/Level in the most recently saved SIP is the Default Window/Level. It is listed as <b>Default (Saved)</b> .  See also “ <b>Understanding Stored Image Presentations</b> ” on page 171.

If...	Then... (Continued)
There are more than one Window/Level in the DICOM header	The Source Window/Level specific for the modality, image device, and/or image type is the Default Window/Level. It is listed as <b>Default (Source n*)</b> , where n is the Source Window/Level number.
There is only one Window/Level in the DICOM header	The Source Window/Level is the Default Window/Level. It is listed as <b>Default (Source)</b> .
There are no saved SIPs or Window/Level values in the DICOM header	The Estimate Window/Level is the Default Window/Level. It is listed as <b>Default (Estimate)</b> .

**Note:** The Default Window/Level is not listed in the **Window/Level** panel.

## Window/Level presets

A predefined Window/Level preset contains predefined Window/Level values and LUT function for a specific modality/intensity unit combination. Window/Level presets can be shipped with Horizon Rad Station, configured for the site, or defined by users.

Window/Level presets are used to quickly apply the optimal image presentation settings for a particular modality and body region. For example, you can save a Window/Level preset that contains optimal settings for the CT modality and the Head body region.

Window/Level presets are listed alphabetically by their name. In addition, for presets whose applied LUT function is not Linear, the LUT function type is appended to the name. For example:

- The **CT Head** preset pertains to the Linear LUT function
- The **CT Soft Tissue - Gamma** preset pertains to the Gamma LUT function

For details on the different LUT functions, see “Types of LUT functions” on page 117.

To add, modify, and deleted Window/Level presets, see “Managing Window/Level presets” on page 126.

## Applying Window/Level values

The Window/Level values can be applied from:

- The **Window/Level** panel (Figure 5-16 on page 108)
- The main toolbar
- The right-click menu



---

There are four types of Window/Level values that you can apply. See [“Types of Window/Level values”](#) on page 110.

---

**Note:**

- The Default Window/Level is not listed in the **Window/Level** panel.
  - You can also use your own [shortcuts](#) to apply the Default Window/Level and Estimate Window/Level. To set up shortcuts, see [“Adding and modifying user shortcuts”](#) on page 304.
- 

## Applying Window/Level values from the Window/Level panel

To apply Window/Level values from the **Window/Level** panel:

- 1 Click the image to which you want to apply the Window/Level values.
- 2 Click the **W/L** icon on the main toolbar.



The **Window/Level** panel is displayed.

For other ways to display the **Window/Level** panel, see step 1 of [“Specifying the Window/Level scope”](#) on page 107.

- 3 Specify the Window/Level scope. See [“Specifying the Window/Level scope”](#) on page 107.
- 4 Click the **Name** box, and select name of the Window/Level you want to apply.

---

**Note:** Not all [Window/Level presets](#) are listed. To apply presets not listed on the menu, see [“Applying a non-listed Window/Level preset”](#) on page 113.

---

The selected Window/Level values are applied accordingly.

## Applying Window/Level values from the main toolbar

To apply Window/Level values from the main toolbar:

- 1 Click the image to which you want to applying the Window/Level values.
- 2 Click the arrow beside the **W/L** icon on the main toolbar.



- 3 From the menu that is displayed, select the Window/Level values you want to apply.

---

**Note:** Not all [Window/Level presets](#) are listed. To apply presets not listed on the menu, see [“Applying a non-listed Window/Level preset”](#) on page 113.

---

The Window/Level values are applied within the Window/Level scope of your choice. You can also select another scope. For details, see [“Specifying the Window/Level scope”](#) on page 107.

---

## Applying Window/Level values from the right-click menu

To apply Window/Level values from the right-click menu:

- Right-click the image to which you want to apply the Window/Level values, point to **Window/Level**, and then select the values you want to apply.

---

**Note:**

- Whether the **Window/Level** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.
- The maximum number of listed [Window/Level presets](#) is preconfigured for your site. To apply presets not listed on the menu, see “[Applying a non-listed Window/Level preset](#)” on page 113.

---

The Window/Level values are applied within the Window/Level scope of your choice. You can also change the scope. For details, see “[Specifying the Window/Level scope](#)” on page 107.

## Applying a Window/Level preset

Apply a Window/Level preset, if you want to quickly adjust the image contrast and brightness. For details of Window/Level presets, see “[Window/Level presets](#)” on page 111.

## Indication of an applied preset

When a Window/Level preset is applied, its name is displayed as [text overlay](#) on the images. For details on text overlay, see “[Displaying or hiding text overlay](#)” on page 77.

## Applying a preset

You can apply a Window/Level preset from:

- The [Window/Level panel](#) ([Figure 5-16](#) on page 108)
- The [main toolbar](#)
- The right-click menu

For procedures, see “[Applying Window/Level values](#)” on page 111.

---

**Note:** You can also use your own [shortcuts](#) to apply Window/Level presets. To set up shortcuts, see “[Adding and modifying user shortcuts](#)” on page 304.

---

## Applying a non-listed Window/Level preset

When you apply a Window/Level preset, presets that are associated with the current [modality/intensity unit](#) combination are listed. However, you may want to apply a non-listed preset in the following situations:

- There are more presets than the number of presets that can be listed, or

- The preset you want to apply is associated with another modality/intensity unit.

**Note:** The maximum number of listed [Window/Level presets](#) is configured for your site. For details, contact McKesson Medical Imaging Group.

To apply a non-listed Window/Level preset:

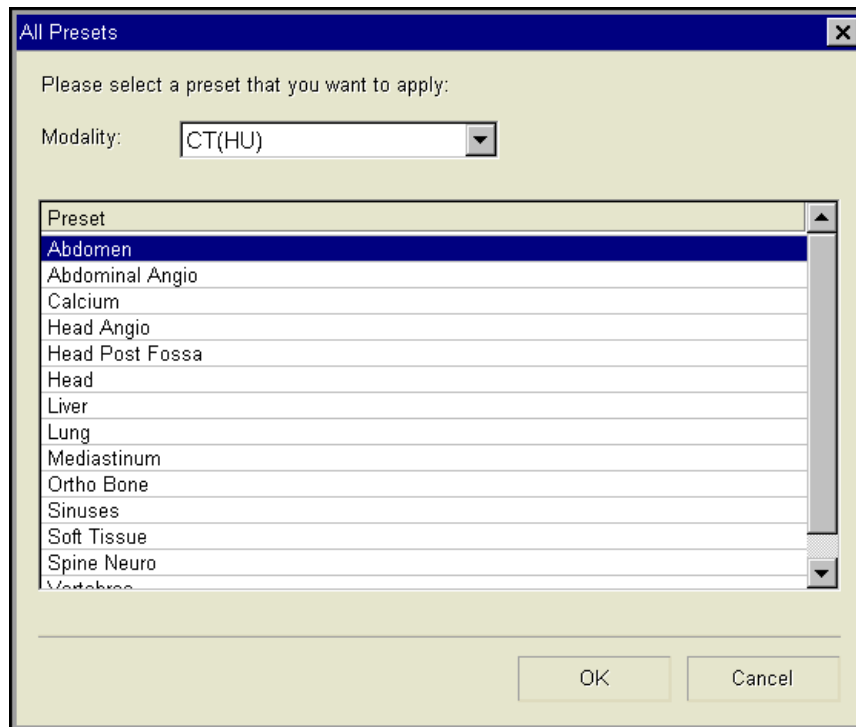
- 1 Click the image to which you want to applying the Window/Level values.
- 2 Click the arrow beside the **W/L** icon on the main toolbar.



- 3 From the menu that is displayed, select **Show All**.

The **All Presets** dialog box is displayed, listing all the Window/Level presets for the modality/intensity associated with the image.

Figure 5-18 All Presets dialog box



- 4 Click the **Modality** box, and specify the modality/intensity unit for which you want to list the presets.
- 5 Click the preset you want to apply.
- 6 Click **OK**.

The Window/Level preset is applied within the Window/Level scope of your choice. You can also select another scope. For details, see [“Specifying the Window/Level scope”](#) on page 107.

## Adjusting the Window/Level values interactively

Using the mouse, you can adjust the **Window/Level** values, regardless of whether the **Window/Level** panel (Figure 5-16 on page 108) is displayed.

### When the Window/Level panel is displayed

To adjust the Window/Level values from the **Window/Level** panel:

- 1 Click the **W/L** icon on the main toolbar.



The **Window/Level** panel is displayed.

- 2 Specify the Window/Level scope. See “[Specifying the Window/Level scope](#)” on page 107.
- 3 Hold the left mouse button, and **drag** the mouse on the image in the appropriate direction.

If...	Then...
Adjusting the Window	Drag the mouse left and right.
Adjusting the Level	Drag the mouse up and down.

- 4 Release the left mouse button.

The Window/Level values are applied, and the values in the **W** and **L** boxes are updated.

### When the Window/Level panel is not displayed

To adjust the Window/Level values, when the **Window/Level** panel is not displayed:

- 1 Hold the right mouse button, and **right-drag** the mouse on the image in the appropriate direction.

If...	Then...
Adjusting the Window	Right-drag the mouse left and right.
Adjusting the Level	Right-drag the mouse up and down.

- 2 Release the right mouse button.

The Window/Level values are applied within the Window/Level scope of your choice. You can also select another scope. For details, see “[Specifying the Window/Level scope](#)” on page 107.

---

## Entering the new Window/Level values

You can enter the new **Window/Level** values, to adjust the image contrast and brightness.

### Steps for this task

To specify the Window/Level values:

- 1 Click the image to which you want to specify the Window/Level values.
- 2 Click the **W/L** icon on the main toolbar.



The **Window/Level** panel is displayed. See *Figure 5-16* on page 108.

For other ways to display the **Window/Level** panel, see step 1 of “[Specifying the Window/Level scope](#)” on page 107.

- 3 Specify the Window/Level scope. See “[Specifying the Window/Level scope](#)” on page 107.
- 4 Enter the new Window/Level values in the **W** and **L** boxes.

The new Window/Level values are applied accordingly.

---

**Note:** If Horizon Rad Station beeps, the new Window/Level values you specified are out of the possible physical range. Depending on the site configuration, Horizon Rad Station either adjusts the values, or leaves the entered values unchanged. For details, contact McKesson Medical Imaging Group.

---

## Resetting the Window/Level values

You can reset the **Window/Level** of a **series**, so that the Default Window/Level is applied to all images within the series. In addition, other presentation settings are reset simultaneously. See “[Resetting the series presentation](#)” on page 136.

For details on the Default Window/Level, see “[Default Window/Level](#)” on page 110.

## Selecting a LUT function to apply

When displaying images on the screen, Horizon Rad Station uses a Look-Up Table (LUT) function to map image **pixel** values to display values.

---

**Note:** Changing the LUT function does not affect the **Window/Level** values.

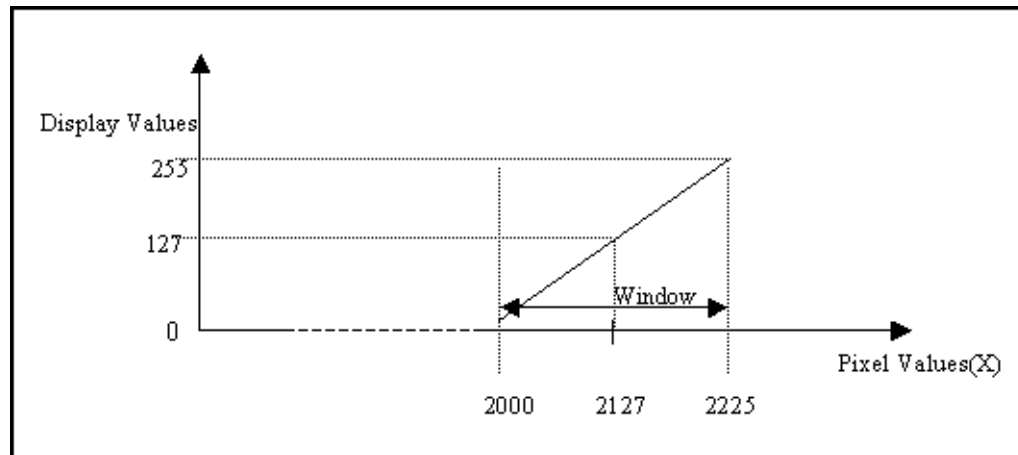
---

### Types of LUT functions

The following table describes the four LUT functions that you can apply.

LUT function	Meaning
Linear	Image <b>pixel</b> values are mapped to their corresponding display values in a linear fashion. See <i>Figure 5-19</i> .
Gamma	A non-linear LUT function. For details, see “ <b>Optimizing image presentation with non-linear LUT functions</b> ” on page 119.
H&D	A non-linear LUT function. For details, see “ <b>Optimizing image presentation with non-linear LUT functions</b> ” on page 119.
External	<p>Image pixel values are mapped to their display values using a Value of Interest (VOI) LUT provided by the <b>image device</b>. The External LUT function is stored in the <b>DICOM header</b>.</p> <p>A VOI LUT is associated with a particular view of the image and is used to outline certain properties of the image. Typically, it is used to enhance the contrast of a specific tissue type on the image. For example, for a <b>CT</b> image, the VOI LUT can specify a range of <b>Hounsfield Units (HU)</b> for bone density, so that only image values for bone tissues are displayed.</p> <hr/> <p><b>Note:</b> You can apply the External LUT only if a Source Window/Level is selected, and it is an external LUT. In addition, the External LUT is applied to the selected images only. For details on Source Window/Level, see “<b>Source Window/Level</b>” on page 110.</p>

Figure 5-19 Linear LUT function



### Steps for this task

To select a LUT function:

- 1 Click the image to which you want to apply the LUT function.
- 2 Click the **W/L** icon on the main toolbar.



The **Window/Level** panel is displayed. See *Figure 5-16* on page 108.

For other ways to display the **Window/Level** panel, see step 1 of “[Specifying the Window/Level scope](#)” on page 107.

- 3 Click the **Type** box, and then select the LUT function you want to apply. For details on LUT functions, see “[Types of LUT functions](#)” on page 117.

Two outcomes are possible:

- If the External LUT function is selected, it is applied to the selected images.
- If another LUT function is selected, it is applied within the Window/Level scope of your choice. You can also select another scope. For details, see “[Specifying the Window/Level scope](#)” on page 107.

## Optimizing image presentation with non-linear LUT functions

This section describes how to apply a non-linear LUT function to images.

### In this section

This section contains the following topics:

Topic	See Page
<a href="#">About non-linear LUT functions</a>	119
<a href="#">Gamma function and Hurter and Driffield (H&amp;D) function</a>	120
<a href="#">Steps for applying a non-linear LUT function</a>	123

### About non-linear LUT functions

Non-linear LUT functions are applied in addition to [Window/Level](#) values. They enable you to optimize the image presentation, by applying a correction factor during image processing.

### Reasons for applying a non-linear function

Image quality can be affected by the following factors:

- Physical limits of the [image device](#)
- Image device configuration
- Acquisition protocol, which defines the relevant anatomical portions a [Technologist](#) captures images for a particular [procedure type](#)
- Default settings, such as over-exposure or under-exposure
- Patient's movement

Because of these factors, linear Window/Level processing does not always display the optimal image quality.

### Supported non-linear LUT functions

Horizon Rad Station supports the following non-linear LUT functions:

- Gamma function
- Hurter and Driffield (H&D) function

For details, see "[Gamma function and Hurter and Driffield \(H&D\) function](#)" on page 120.



## Gamma function and Hurter and Driffield (H&D) function

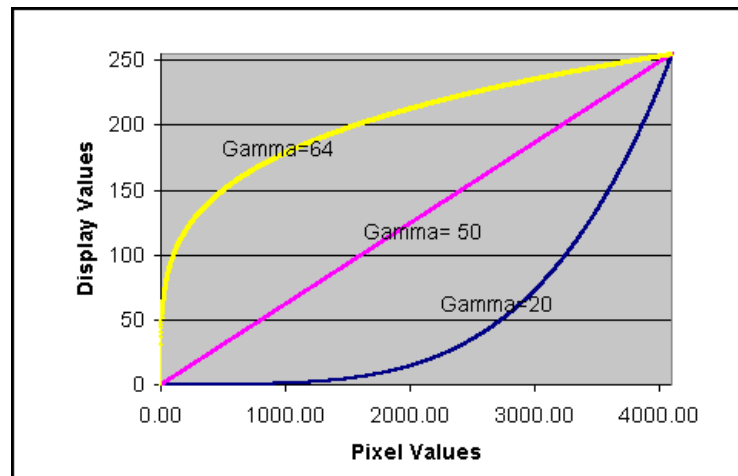
This section describes the two non-linear LUT functions that you can apply to images. They include:

- Gamma function
- H&D function

### Gamma function

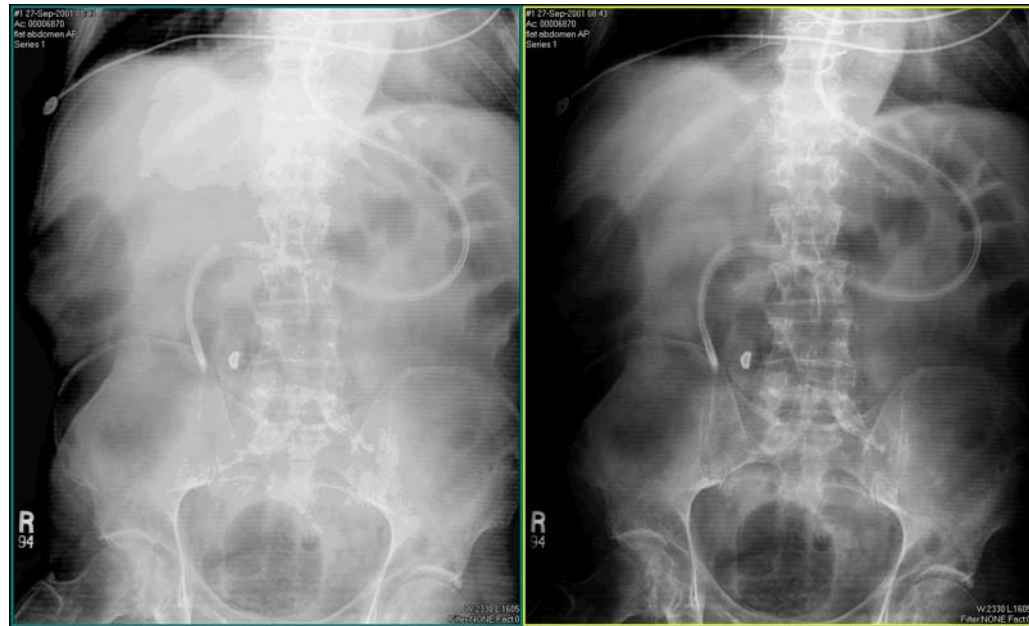
Figure 5-20 displays the Gamma function in Horizon Rad Station.

Figure 5-20 Gamma function



The Gamma function is affected by the parameter called the *Gamma* coefficient. By specifying the Gamma coefficient, you can modify the display values, until the optimal image presentation is obtained.

Figure 5-21 Abdomen image: linear function (left) and Gamma function (right)

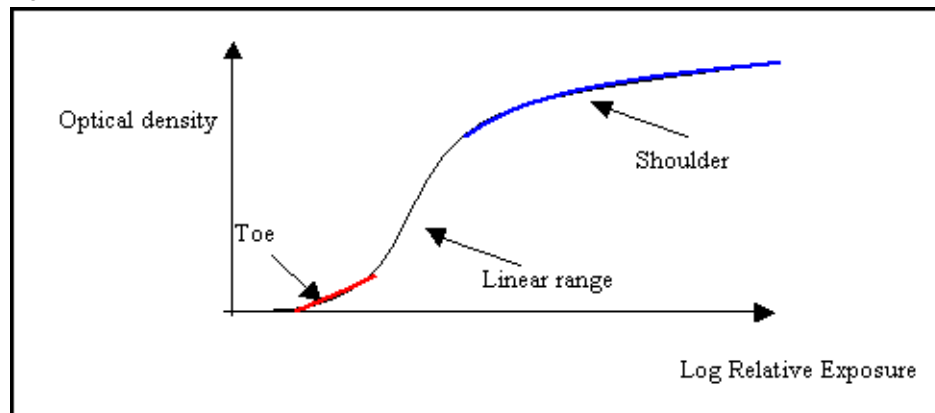


To apply the Gamma function to images, see [“Steps for applying a non-linear LUT function”](#) on page 123.

### Hurter and Driffield (H&D) function

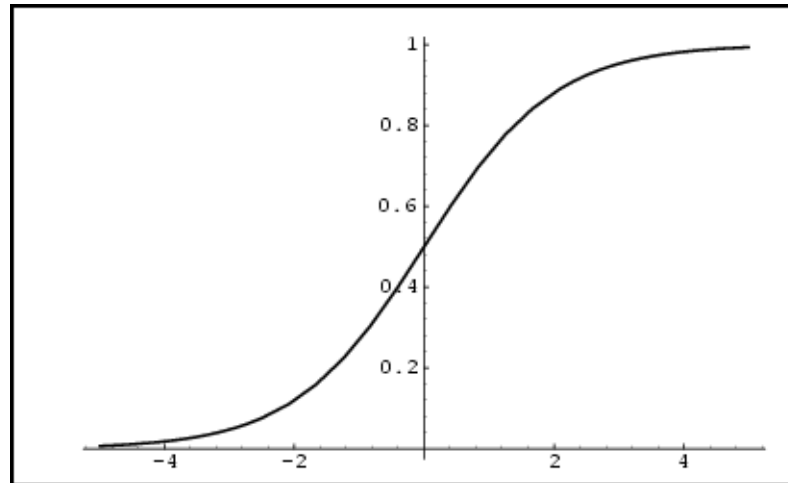
The H&D curve by Hurter and Driffield shows the relationship between the light/X-Ray exposure and optical density.

Figure 5-22 H&amp;D curve



In Horizon Rad Station, the H&D curve is implemented by a modified sigmoid function, to represent the relationship between optical density and display values. This modified curve is called the H&D function.

Figure 5-23 H&amp;D function



H&D function is affected by two parameters:

- The *Toe* coefficient shifts the function left and right, enabling you to view different tissue types.
- The *Shoulder* coefficient changes the steepness (also called slope) of the function, enabling you to modify the image contrast.

By specifying the Toe and Shoulder coefficients, you can modify display values for different **procedure types** or **body regions**, until the optimal image presentation is obtained.

Figure 5-24 Knee image: linear function (left) and H&amp;D function (right)



To apply the H&D function to images, see [“Steps for applying a non-linear LUT function”](#) on page 123.

## Steps for applying a non-linear LUT function

For an overview of non-linear LUT functions, see “About non-linear LUT functions” on page 119.

### Steps for this task

To apply a non-linear LUT function:

- 1 Click the image to which you want to apply the non-linear LUT function.
- 2 Click the **W/L** icon on the main toolbar.



The **Window/Level** panel is displayed. See *Figure 5-16* on page 108.

For other ways to display the **Window/Level** panel, see step 1 of “Specifying the Window/Level scope” on page 107.

- 3 Click the **Type** box, and then select the type of non-linear LUT function you want to apply. For details on the non-linear LUT functions, see “Gamma function and Hurter and Driffield (H&D) function” on page 120.

The corresponding coefficients are displayed at the bottom of the **Window/Level** panel.

- 4 Specify the coefficients associated with the selected non-linear LUT function, by **dragging** the slider.

If...	Then...
Applying the <b>Gamma</b> function	Specify the <b>Gamma</b> coefficient to modify the display values, until the optimal image presentation is obtained. See <i>Figure 5-25</i> on page 123.
Applying the <b>H&amp;D</b> function	Specify the <b>Toe</b> coefficient and <b>Shoulder</b> coefficient to modify the display values for different <b>procedure types</b> or <b>body regions</b> , until the optimal image presentation is obtained. See <i>Figure 5-26</i> on page 124.

*Figure 5-25* Applying the Gamma Coefficient

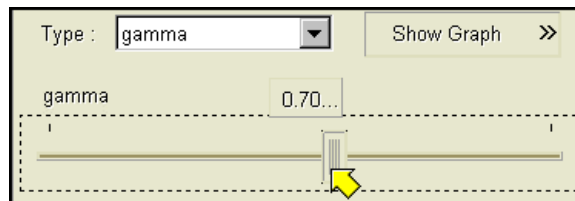
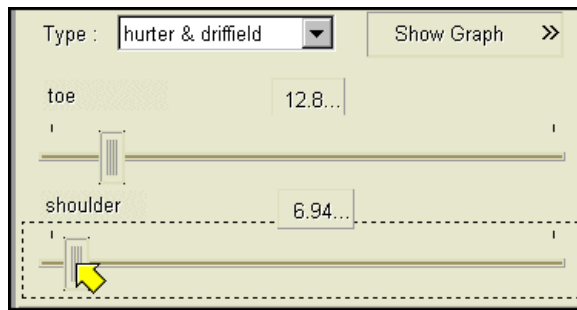


Figure 5-26 Applying the H&D Coefficients



The non-linear LUT function is applied within the Window/Level scope of your choice. You can also select another scope. For details, see “[Specifying the Window/Level scope](#)” on page 107.

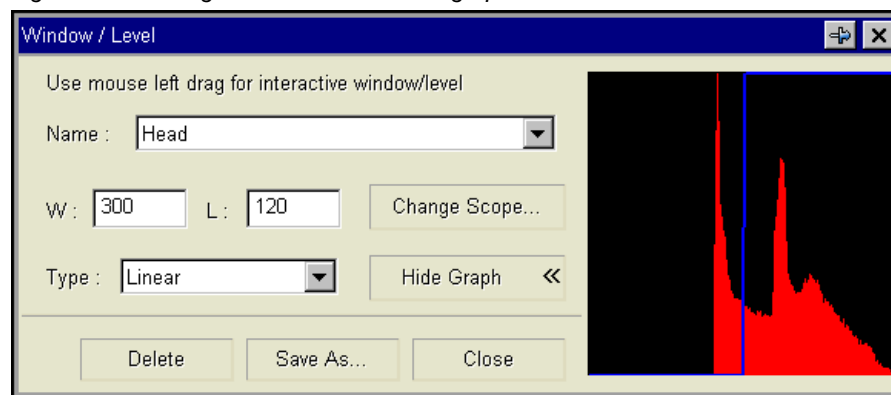
## Displaying and hiding the histogram and LUT function graph

While adjusting the image contrast and brightness, you can display and hide the following items in the **Window/Level** panel:

- The histogram that depicts the frequency distribution of image intensities. The horizontal axis in a histogram shows the pixel values; the vertical axis shows the pixel count.
- LUT function graph. The horizontal axis shows the pixel values; the vertical axis shows the display values.

The histogram and LUT function graph are drawn within the possible physical range. They are updated when you change the **Window/Level** values and/or LUT function.

Figure 5-27 Histogram and LUT function graph



**Note:** The histogram and LUT function graph are intended for presentation purpose only. You cannot use them to change the image contrast and brightness.

## Steps for this task

To display or hide the histogram and LUT function graph:

- 1 Click the image whose histogram and LUT function graph you want to display or hide.
- 2 Click the **W/L** icon on the main toolbar.



The **Window/Level** panel is displayed. See *Figure 5-16* on page 108.

For other ways to display the **Window/Level** panel, see step 1 of “[Specifying the Window/Level scope](#)” on page 107.

- 3 Do one of the following:

If...	Then...
Displaying the histogram and LUT function graph	Click <b>Show Graph</b> .
Hiding the histogram and LUT function graph	Click <b>Hide Graph</b> .

The histogram and graph are displayed or hidden accordingly.

## Managing Window/Level presets

This section describes how to add, modify, or delete Window/Level presets.

### In this section

This section contains the following topics:

Topic	See Page
<a href="#">Adding a Window/Level preset</a>	126
<a href="#">Modifying a Window/Level preset</a>	127
<a href="#">Deleting a Window/Level preset</a>	129

### Adding a Window/Level preset

You can save the [Window/Level](#) values and the applied LUT function as a preset, so that it can be applied at a later time. For details, see [“Window/Level presets”](#) on page 111.

### Restrictions for adding a Window/Level preset

The following restrictions exist:

- You can add Window/Level presets for your use only. To add Window/Level presets for the site, contact McKesson Medical Imaging Group.
- You cannot add a Window/Level preset if the External LUT function is selected. For details on the External LUT function, see [“Types of LUT functions”](#) on page 117.

### Pre-requisites

Before adding a Window/Level preset, you need to specify the following settings:

- [Window/Level](#) values, and/or
- LUT function and coefficients (if applicable)

For details, see [“Adjusting the Window/Level values”](#) on page 109 and [“Selecting a LUT function to apply”](#) on page 117.

### Steps for this task

To add a Window/Level preset:

- 1 Click the **W/L** icon on the main toolbar.



- 2 Click **Save As** in the [Window/Level](#) panel.

Alternatively, instead of steps 1-2, do one of the following:

- Click the arrow beside the **W/L** icon on the main toolbar, and then select **Save As Preset**.
- Right-click an image and point to **Window/Level**, and then select **Save As Preset**.

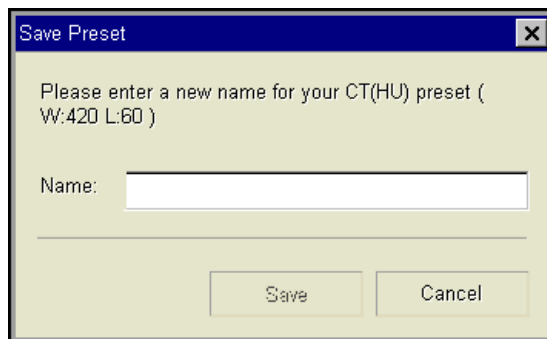
---

**Note:** Whether the **Window/Level** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

---

The **Save Preset** dialog box is displayed.

Figure 5-28 Save Preset dialog box



- 3 Enter a unique identification name of the preset. You can enter up to 256 characters. The preset name is not case sensitive.
- 4 Click **Save**.

The Window/Level preset is saved for the [modality/intensity unit](#).

## Modifying a Window/Level preset

The mostly recently applied [Window/Level preset](#) can be modified.

---

**Note:** Window/Level presets can be shipped with Horizon Rad Station, configured for the site, or predefined by users. If the Window/Level preset is a system or site preset and you modify it, it becomes your personal preset. The system or site preset is no longer available to you.

---

## Restriction for modifying a Window/Level preset

If you apply the Window/Level preset, and then apply the Estimate Window/Level or Source Window/Level, the Window/Level preset cannot be modified. For details on the Estimate Window/Level and Source Window/Level, see “[Types of Window/Level values](#)” on page 110.



### Steps for this task

To modify a Window/Level preset:

- 1 Apply the Window/Level preset that you want to modify. See [“Applying a Window/Level preset”](#) on page 113.
- 2 Modify the following settings:
  - [Window/Level values](#) (See [“Adjusting the Window/Level values”](#) on page 109)
  - LUT function and coefficients (if applicable) (See [“Selecting a LUT function to apply”](#) on page 117)
- 3 Click the arrow beside the **W/L** icon on the main toolbar.



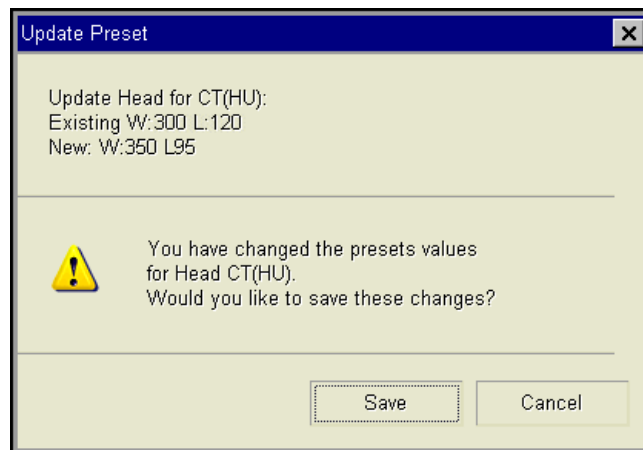
- 4 From the menu that is displayed, select **Update Preset**.

Alternatively, instead of steps 3-4, right-click an image and point to **Window/Level**, and then select **Update Preset**.

**Note:** Whether the **Window/Level** option is displayed on the right-click menu depends on your right-click preferences. See [“Main toolbar preferences”](#) on page 296.

The **Update Preset** dialog box is displayed.

Figure 5-29 Update Preset dialog box



- 5 Click **Save**.

The new preset settings are saved.

## Deleting a Window/Level preset

Window/Level presets can be deleted permanently.

**Note:** Window/Level presets can be shipped with Horizon Rad Station, configured for the site, or predefined by users. If the Window/Level preset is a system or site preset, it is deleted for your account only. The Window/Level preset is still available to other users.

### Deleting the currently applied Window/Level preset

To delete the currently applied Window/Level preset:

- 1 Click the **W/L** icon on the main toolbar.

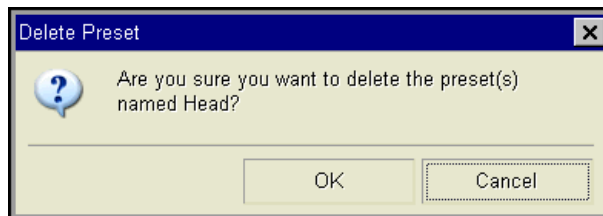


The **Window/Level** panel is displayed. See *Figure 5-16* on page 108. The currently applied Window/Level preset is selected.

- 2 Click **Delete**.

A confirmation message is displayed.

*Figure 5-30 Delete Preset confirmation message*



- 3 Click **Yes** to confirm the deletion.

The Window/Level preset is deleted.

### Deleting Window/Level presets

You can delete a Window/Level preset for a **modality/intensity unit**, or multiple presets at the same time.

To delete multiple Window/Level presets:

- 1 Click the arrow beside the **W/L** icon on the main toolbar.



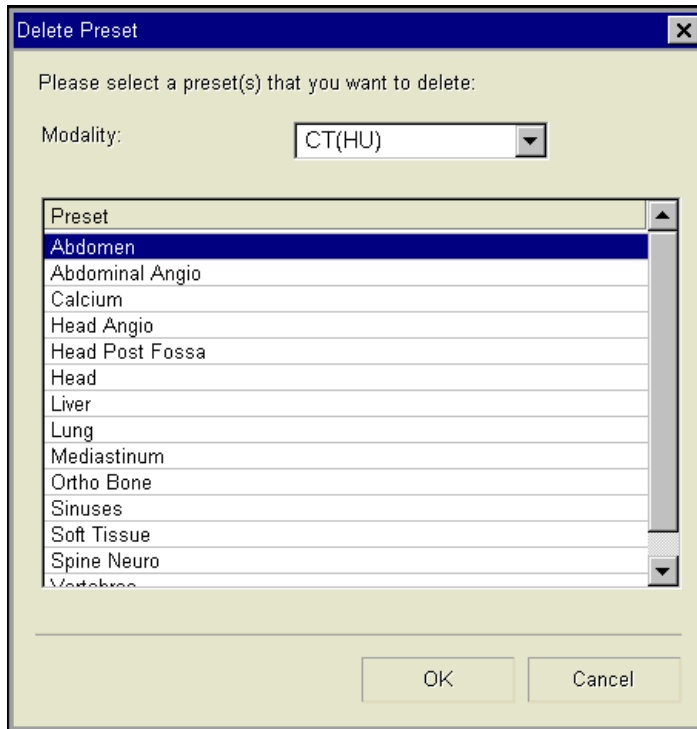
- From the menu that is displayed, select **Delete**.

Alternatively, instead of steps 1-2, right-click an image and point to **Window/Level**, and then select **Delete**.

**Note:** Whether the **Window/Level** option is displayed on the right-click menu depends on your right-click preferences. See “Main toolbar preferences” on page 296.

The **Delete Preset** dialog box is displayed, listing all the Window/Level presets for the modality/intensity unit.

Figure 5-31 Delete Preset dialog box



- Click the **Modality** box, and specify the modality/intensity unit for which you want to list the presets.
- Select the presets that you want to delete:

If...	Then...
Deleting a preset	Click the preset you want to delete. Alternatively, use the UP and DOWN arrow keys to select the preset.
Deleting multiple presets	Hold down the CTRL key, and then click the presets you want to delete.

- Click **OK**.

A confirmation message is displayed. See *Figure 5-30* on page 129.

- 6 Click **Yes** to confirm the deletion.  
The selected Window/Level presets are deleted.

## Inverting the image contrast

You can reverse the gray values of all the images in a [series](#).

---

**Note:** Reversed gray values are treated as [Window/Level](#) values:

- They are saved as Window/Level values in [Stored Image Presentations \(SIPs\)](#). For details on SIPs, see [“Understanding Stored Image Presentations”](#) on page 171.
  - They can be saved as a [preset](#). See [“Adding a Window/Level preset”](#) on page 126.
- 

### Steps for this task

To invert the image contrast:

- 1 Click an image.
- 2 Click the **Invert** icon on the main toolbar.



Alternatively, instead of steps 1-2, do one of the following:

- Right-click an image, and then select **Invert**.

---

**Note:** Whether the **Invert** option is displayed on the right-click menu depends on your right-click preferences. See [“Main toolbar preferences”](#) on page 296.

---

- Use your own [shortcut](#) to invert the image contrast. To set up a shortcut, see [“Adding and modifying user shortcuts”](#) on page 304.

## Applying post processing

This section describes how to apply post processing to images.

### In this section

This section contains the following topics:

Topic	See Page
<a href="#">About post processing</a>	132
<a href="#">Specifying the post processing scope</a>	133
<a href="#">Steps for applying post processing to images</a>	134

### About post processing

Processing can be applied to images after they have been captured and stored. Applying post processing enables you to enhance certain features of an image before making a [diagnosis](#), for example, a hairline fracture in a bone.

Post processing is typically applied to [CT/DX/DR](#) images.

### Sharpening and smoothening images

You can enhance certain features of an image, in the following ways:

- Sharpen the image, by increasing the contrast between adjacent [pixels](#)
- Smoothen the image, by decreasing contrast between adjacent pixels

For details, see [“Steps for applying post processing to images”](#) on page 134.

### Restriction for applying post processing to images

Post processing cannot be applied when the images are in Cine mode. For details on the series display modes, see [“Selecting the series display mode”](#) on page 49.

### Applying post processing to a region of interest (ROI)

Post processing can be applied to a small, magnified area of an image. For details, see [“Magnifying a region of interest \(ROI\)”](#) on page 92.

## Specifying the post processing scope

The post processing scope determines the extent to which post processing is applied. For an overview of post processing, see [“About post processing”](#) on page 132.

### Available post processing scopes

The following table describes the available post processing scopes in Horizon Rad Station.

Post processing scope	Meaning
Selected images	Apply post processing to selected images
Selected series	Apply post processing to images in the selected <a href="#">series</a> .
All visible series	Apply post processing to images in all series that are displayed.

### Steps for this task

To specify the post processing scope:

- 1 Click the **Post** icon on the main toolbar.



The **Post Processing** dialog box is displayed. See [Figure 5-32](#).

Alternatively, do one of the following:

- Right-click the image to which you want to apply post processing, and then select **Post Processing**.

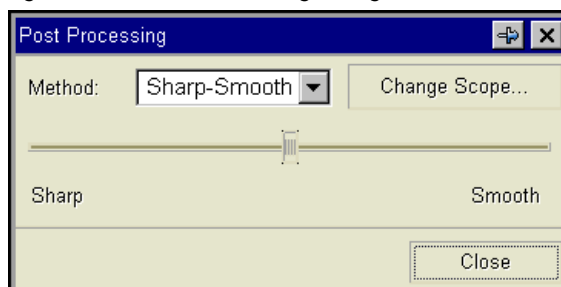
---

**Note:** Whether the **Post Processing** option is displayed on the right-click menu depends on your right-click preferences. See [“Main toolbar preferences”](#) on page 296.

---

- Use your own [shortcuts](#) to display the **Post Processing** dialog box. To set up shortcuts, see [“Adding and modifying user shortcuts”](#) on page 304.

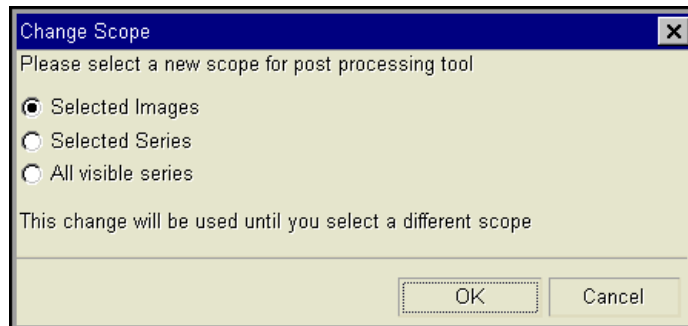
Figure 5-32 Post Processing dialog box



- 2 Click **Change Scope**.

The **Change Scope** dialog box is displayed.

Figure 5-33 Change scope dialog box



- 3 Select the post processing scope. For details, see [“Available post processing scopes”](#) on page 133.
- 4 Click **OK**.

## Steps for applying post processing to images

You can apply post processing to images, or remove it. For an overview of post processing, see [“About post processing”](#) on page 132.

### Note:

- Post processing not only can be applied to the entire image, but also to a small, magnified area of an image. For details, see [“Magnifying a region of interest \(ROI\)”](#) on page 92.
- Post processing can be removed from a [series](#), by resetting the presentation settings. For details, see [“Resetting the series presentation”](#) on page 136.

## Applying post processing

To apply post processing:

- 1 Click the **Post** icon on the main toolbar.



The **Post Processing** dialog box is displayed. See [Figure 5-32](#) on page 133.

For other ways to display the **Post Processing** dialog box, see step 1 of [“Specifying the post processing scope”](#) on page 133.

- 2 Click the **Method** box, and select **Sharp-Smooth**.
- 3 Specify the post processing scope. See [“Specifying the post processing scope”](#) on page 133.

- 4 **Drag** the slider in the appropriate direction, to adjust the contrast between adjacent pixels:

If...	Then...
Sharpening the images more	Drag the slider to the left.
Smoothering the images more	Draft the slider to the right.

- 5 Click **Close**.

## Removing post processing

To remove post processing:

- 1 Click the **Post** icon on the main toolbar.



The **Post Processing** dialog box is displayed. See *Figure 5-32* on page 133.

For other ways to display the **Post Processing** dialog box, see step 1 of “[Specifying the post processing scope](#)” on page 133.

- 2 Specify the images from which you want to remove post processing. See “[Specifying the post processing scope](#)” on page 133
- 3 Click the **Method** box, and select **None**.
- 4 Click **Close**.



## Resetting the series presentation

All the presentation settings of a series can be reset at once. You can:

- Zoom the images to fit the [viewport](#)
- Display the images with the standard orientation
- Apply the Default [Window/Level](#) to the images (See “[Default Window/Level](#)” on page 110)
- Remove post processing from the images (See “[About post processing](#)” on page 132)

### Steps for this task

To reset the presentation settings of a series:

- Right-click the viewport and select **Reset**.

---

**Note:** Whether the **Reset** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

---

## Changing image compression

This section describes how to change the compression ratio at which images are viewed.

### In this section

This section contains the following topics:

Topic	See Page
<a href="#">About image compression</a>	137
<a href="#">Specifying image compression</a>	137

### About image compression

You can change the compression ratio of study images. The compression ratio affects the speed at which images are loaded in Horizon Rad Station. The image compression ratio also affects image quality. A higher compression ratio increases the image loading speed, but it also results in lower image quality.

---

**Note:** You can set the user preferences to determine the compression ratio for study images, based on modality. For details, see [“Image compression preferences”](#) on page 295.

---

### Example of when to perform this task

Some users may be accessing Horizon Rad Station through a slow Internet connection. In this case, choosing a higher compression ratio will speed up the image loading process. However, if image quality is a priority, users may want to view images at a lower compression ratio instead.

### Specifying image compression

Horizon Rad Station enables you to change the compression ratio of images while a study is opened.

#### Steps for this task

To change the image compression:

- 1 In an open study, click the **Image Compression** icon on the main toolbar.



- 2 Select a compression ratio. See [“Compression ratio options”](#) on page 138.

The compression ratio is adjusted.

## Compression ratio options

The following table describes the default compression ratio options.

Option	Function
Original	Reflects, approximately, the original image compression.  <b>Note:</b> Setting the compression ratio to Original does not ensure that images are displayed as exact replicas of the original images.
Clinical (20:1)	A default compression ratio that reflects, approximately, a twenty fold increase in compression from the original image.  <b>Note:</b> The default name and ratio can be configured specifically for your site.
Reference (60:1)	A default compression ratio that reflects, approximately, a sixty fold increase in compression from the original image.  <b>Note:</b> The default name and ratio can be configured specifically for your site.

## Adding annotations

This section describes how to add annotations to images.

### In this section

This section contains the following topics:

Topic	See Page
<a href="#">Understanding annotations</a>	139
<a href="#">Using the Annotation tools</a>	140
<a href="#">Annotating images</a>	144
<a href="#">Measuring images</a>	153
<a href="#">Sharing annotations</a>	163
<a href="#">Moving annotations</a>	166
<a href="#">Resizing annotations</a>	167
<a href="#">Modifying annotations</a>	167
<a href="#">Deleting annotations</a>	169

## Understanding annotations

Text, drawings, and drawings with measurements can be placed on images.

---

**Note:** You cannot add or modify persistent annotations in Horizon Rad Station Distributed. See “[Persistent vs. temporary annotations](#)” on page 139.

---

### Persistent vs. temporary annotations

There are two types of annotations that you can add:

- Persistent annotations are contained in existing Stored Image Presentation (SIPs). For details on SIPs, see “[Understanding Stored Image Presentations](#)” on page 171.
- Temporary annotations are deleted when a study is closed.

### Restrictions for adding and modifying persistent annotations

Persistent annotations are contained in SIPs. You cannot add or modify persistent annotations in Horizon Rad Station Distributed. For details on creating persistent annotations using Horizon Rad Station Advanced, refer to the *Horizon Rad Station Advanced User's Guide*.

## Using the Annotation tools

This section describes the annotation tools, and how to use them.







### In this section








This section contains the following topics:

Topic	See Page
List of the annotation tools	140
Selecting an annotation tool	142
Setting the annotation properties	143

### List of the annotation tools

The following table describes the annotation tools in Horizon Rad Station. To use the annotation tools to create [annotations](#), see [“Annotating images”](#) on page 144 and [“Measuring images”](#) on page 153.

Tool	Functionality
<b>Distance</b> 	Draw a line and measure the distance between the endpoints.
<b>Simple Angle</b> 	Draw and measure an angle in degrees.
<b>Cobb Angle</b> 	Draw and measure a <a href="#">Cobb angle</a> .  This tool is used to measure spinal scoliosis.
<b>Elliptical ROI</b> 	Define an Elliptical Region of Interest (ROI), and measure its <a href="#">pixel</a> intensity parameters, area, and perimeter.  Elliptical ROI is exclusively used in <a href="#">CT</a> studies.
<b>Point Analysis</b> 	Measure the pixel intensity of a point.  This tool is exclusively used in CT studies.
<b>Arrow</b> 	Place arrows on an image.

Tool	Functionality (Continued)
<b>Text</b> 	Place comments on an image.
<b>Spine Labeling</b> 	Add vertebrae and disk labels. This tool is used in one of the following ways: <ul style="list-style-type: none"> <li>• Label the <b>sagittal</b> or <b>coronal</b> view of a <b>MR</b> spine study when scrolling through <b>axial</b> images</li> <li>• Label the axial images if the sagittal or coronal view are not available or being viewed simultaneously</li> </ul>
<b>Ellipse</b> 	Place ellipses on an image.
<b>Cover</b> 	Mask an image, by covering an area of the image with a rectangle.
<b>Calibrate</b> 	Define the measurement scale.
<b>Eraser</b> 	Delete an annotation.
<b>Delete All</b> 	Delete all annotations from a single image, selected images, or all images in the <b>series</b> .

## Selecting an annotation tool

You can select an **annotation tool** from the **main toolbar**, or the image right-click menu.

Alternatively, use your own **shortcuts** to select the tools. To set up shortcuts, see “**Adding and modifying user shortcuts**” on page 304.

### From the main toolbar

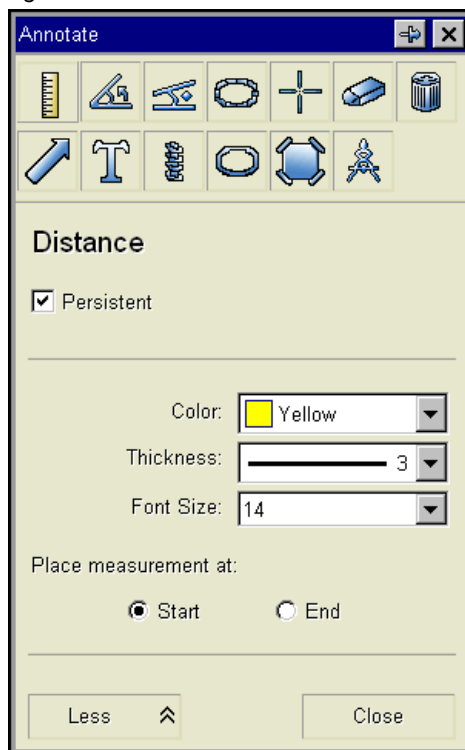
To select an annotation tool from the main toolbar:

- 1 Click the **Annotate** icon on the main toolbar.



The **Annotation Control Panel** is displayed.

Figure 5-34 Annotation Control Panel



- 2 Click the tool of your choice.

---

**Note:** Alternatively, instead of step 1-2, click the arrow beside the **Annotate** icon, and then select the tool. The Annotation Control Panel is displayed, with the tool selected.

---

## From the image right-click menu

To select an annotation tool from the image right-click menu:

- Right-click the image and point to **Annotate**, and then select the tool of your choice.

**Note:** Whether the **Annotate** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

The [Annotation Control Panel](#) is displayed, with the tool selected.

## Setting the annotation properties

Once an [annotation tool](#) is [selected](#), the properties of the tool are displayed on the [Annotation Control Panel](#). For example, the **Text** tool consists of the following properties:

- Whether text is persistent or temporary (See “[Persistent vs. temporary annotations](#)” on page 139)
- Color
- Font size

Figure 5-35 Properties of the Text tool are displayed



Different annotation tools have different properties. You can set the properties before adding [annotations](#). For details, see “[Annotating images](#)” on page 144 and “[Measuring images](#)” on page 153.

In addition, you can display the essential properties only, or all the properties.

If...	Then...
Displaying the essential properties only	Click <b>Less</b> .
Displaying all properties	Click <b>More</b> .



## Annotating images

This section describes how to annotate images.

### In this section

This section contains the following topics:

Topic	See Page
Drawing arrows	144
Drawing ellipses	146
Masking images	147
Adding text	149
Adding spine labels with auto numbering	150

### Drawing arrows

Draw an arrow to point to a **body region** or any other important detail on the image.

You need to:

- Select the **Arrow** tool
- Adjust the **Arrow** tool properties (if necessary)
- Draw the arrow

#### Step 1: Select the Arrow tool

To select the tool:

- 1 Click the **Annotate** icon on the main toolbar.



- 2 Click the **Arrow** tool on the **Annotation Control Panel**.



For other ways to select the tool, see "[Selecting an annotation tool](#)" on page 142.

## Step 2: Adjust the Arrow tool properties (if necessary)

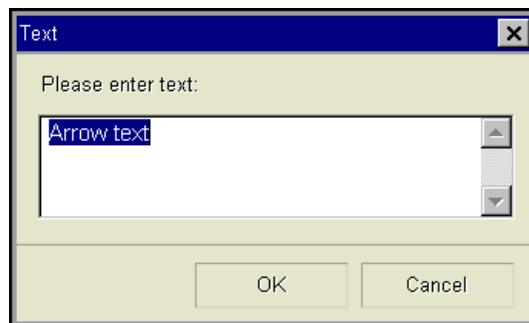
For an overview of annotation properties, see “Setting the annotation properties” on page 143.

To adjust the tool properties:

- 1 Specify if you want to attach text to the annotation:

If...	Then...
Attaching text	<ol style="list-style-type: none"> <li>1 Select the <b>Show text</b> check box.</li> <li>2 Click <b>Text</b>. The <b>Text</b> dialog box is displayed.</li> <li>3 Type the text that you want to attach.</li> <li>4 Click <b>OK</b>. The <b>Text</b> dialog box is closed.</li> </ol>
Not attaching text	Clear the <b>Show text</b> check box.

Figure 5-36 Text dialog box



- 2 Click the **Color** box, and specify the color of the annotation.
- 3 Click the **Thickness** box, and specify the line width.
- 4 Click the **Font size** box, and specify the font size of the attached text.
- 5 Specify where to put the arrow head. The following table describes the available options:

Option	Meaning
Start	Put the arrow head at the beginning of the line.
End	Put the arrow head at the end of the line.
Both	Put an arrow head at both ends.

### Step 3: Draw the arrow

To draw an arrow:

- 1 Drag the **mouse pointer** across the area of the image where you want to place the arrow.
- 2 Release the mouse button.

An arrow is added to the image. If you have attached text to it, the text is displayed. For details, see step 2 of “[Step 2: Adjust the Arrow tool properties \(if necessary\)](#)” on page 145.

**Note:** If the **Historical annotation set displayed** dialog box is displayed, see “[Troubleshooting image annotations](#)” on page 378.

## Drawing ellipses

Draw an ellipse to highlight a region of interest.

You need to:

- Select the **Ellipse** tool
- Adjust the **Ellipse** tool properties (if necessary)
- Draw the ellipse

### Step 1: Select the Ellipse tool

To select the tool:

- 1 Click the **Annotate** icon on the main toolbar.



- 2 Click the **Ellipse** tool on the [Annotation Control Panel](#).



For other ways to select the tool, see “[Selecting an annotation tool](#)” on page 142.

### Step 2: Adjust the Ellipse tool properties (if necessary)

For an overview of annotation properties, see “[Setting the annotation properties](#)” on page 143.

To adjust the tool properties:

If...	Then...
Specifying whether to attach text to the annotation	Follow step 1 of “ <a href="#">Step 2: Adjust the Arrow tool properties (if necessary)</a> ” on page 145.

If...	Then... (Continued)
Specifying the color of the annotation	Follow step 2 of “ <a href="#">Step 2: Adjust the Arrow tool properties (if necessary)</a> ” on page 145.
Specifying the thickness of the line width	Follow step 3 of “ <a href="#">Step 2: Adjust the Arrow tool properties (if necessary)</a> ” on page 145.
Specifying the font size of the attached text	Follow step 4 of “ <a href="#">Step 2: Adjust the Arrow tool properties (if necessary)</a> ” on page 145.

### Step 3: Draw the ellipse

To draw an ellipse:

- 1 Drag the **mouse pointer** diagonally across the area of the image where you want to place the ellipse.
- 2 Release the mouse button.

An ellipse is placed on the image. If you have attached text to it in the properties, the text is displayed.

---

**Note:** If the **Historical annotation set displayed** dialog box is displayed, see “[Troubleshooting image annotations](#)” on page 378.

---

## Masking images

You can hide a particular area of an image, by covering it with a solid-color rectangle.

You need to:

- Select the **Cover** tool
- Adjust the **Cover** tool properties (if necessary)
- Place the cover

### Step 1: Select the Cover tool

To select the tool:

- 1 Click the **Annotate** icon on the main toolbar.



- 2 Click the **Cover** tool on the [Annotation Control Panel](#).



For other ways to select the tool, see “[Selecting an annotation tool](#)” on page 142.

## Step 2: Adjust the Cover tool properties (if necessary)

For an overview of annotation properties, see [“Setting the annotation properties”](#) on page 143.

To adjust the tool properties:

If...	Then...
Specifying whether to attach text to the annotation	Follow step 1 of <a href="#">“Step 2: Adjust the Arrow tool properties (if necessary)”</a> on page 145.
Specifying the color of the annotation	Follow step 2 of <a href="#">“Step 2: Adjust the Arrow tool properties (if necessary)”</a> on page 145.
Specifying the font size of the attached text	Follow step 4 of <a href="#">“Step 2: Adjust the Arrow tool properties (if necessary)”</a> on page 145.

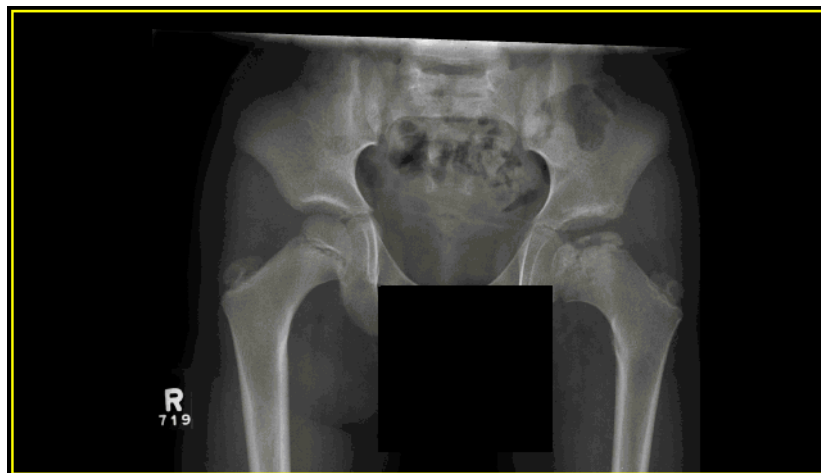
## Step 3: Place the cover

To place a cover on an image:

- 1 Drag the [mouse pointer](#) across the area that you want to cover.
- 2 Release the mouse button.

The defined area is covered by a rectangle. If you have attached text to it in the properties, the text is displayed.

Figure 5-37 The image is masked



**Note:** If the **Historical annotation set displayed** dialog box is displayed, see [“Troubleshooting image annotations”](#) on page 378.

## Adding text

Text can be added to an image. For example,

- **Technologists** may have forgotten to put markers or comments on the **image device** when capturing the images.
- **Radiologists** may want to put clinical findings for **Referring Physicians** who view the study from a remote location.

To add text to an image, you need to:

- Select the **Text** tool
- Adjust the **Text** tool properties (if necessary)
- Add the text

### Step 1: Select the Text tool

To select the tool:

- 1 Click the **Annotate** icon on the main toolbar.



- 2 Click the **Text** tool on the **Annotation Control Panel**.



For other ways to select the tool, see “[Selecting an annotation tool](#)” on page 142.

### Step 2: Adjust the Text tool properties (if necessary)

For an overview of annotation properties, see “[Setting the annotation properties](#)” on page 143.

To adjust the tool properties:

If...	Then...
Specifying the color of the text	Follow step 2 of “ <a href="#">Step 2: Adjust the Arrow tool properties (if necessary)</a> ” on page 145.
Specifying the font size of the text	Follow step 4 of “ <a href="#">Step 2: Adjust the Arrow tool properties (if necessary)</a> ” on page 145.

### Step 3: Add the text

To add text:

- 1 Click the image where you want to add the comment.
- 2 Type your comment in the text box. To insert a new line, press the ENTER key.
- 3 Click outside the text box.

The comment is added to the image.

---

**Note:** If the **Historical annotation set displayed** dialog box is displayed, see [“Troubleshooting image annotations”](#) on page 378.

---

### Adding spine labels with auto numbering

Spine labels can be added to an image, to identify vertebra or inter-vertebral disks. The **Spine Labeling** tool is used in one of the following ways:

- Label the **sagittal** or **coronal** view of a **MR** spine study when scrolling through **axial** images
- Label the axial images if the sagittal or coronal view are not available or being viewed simultaneously

You need to:

- Select the **Spine Labeling** tool
- Adjust the **Spine Labeling** tool properties (if necessary)
- Place the labels

You need to specify the first label only, and the direction in which the spine is labeled. After adding a label, Horizon Rad Station automatically chooses the next label.

The following table lists the vertebrae and disk labels that you can add:

Vertebrae	Vertebrae labels	Disk labels
Cervical	C1 to C7	C1-C2 to C6-C7
Thoracic	T1 to T12	C7-T1 to T11-T12
Lumbar	L1 to L5; L6 if manually added	T12-L1 to L4-L5; L5-L6 if manually added
Sacrum	S1	L5-S1; L6-S1 if manually added

### Restriction for adding spine labels

Once a spine label is added, you cannot modify its name.

### Step 1: Select the Spine Labeling tool

To select the tool:

- 1 Click the **Annotate** icon on the main toolbar.



- 2 Click the **Spine Labeling** tool on the **Annotation Control Panel**.



For other ways to select the tool, see “[Selecting an annotation tool](#)” on page 142.

### Step 2: Adjust the Spine Labeling tool properties (if necessary)

For an overview of annotation properties, see “[Setting the annotation properties](#)” on page 143.

To adjust the tool properties:

- 1 Specify the type of labels that you want to place. The options are:
  - **Vertebrae**
  - **Disk**
- 2 Specify the direction used to place the labels. The options are:
  - **Head to foot**
  - **Foot to head**
- 3 Click the **Next label** box, and specify the first label to add.
- 4 Click the **Color** box, and specify the color of the labels.
- 5 Click the **Font size** box, and specify the font size of the labels.

### Step 3: Place the labels

To place spine labels:

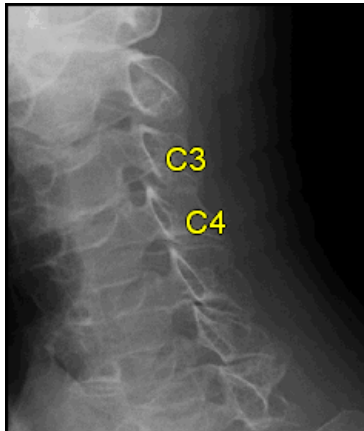
- 1 Click an image where you want to place the first label.

The label is placed in that location. The **Next label** box indicates the next available label that you can place.

- 2 Repeat step 1 as many time as necessary, to place the sequential labels.



Figure 5-38 Spine labels



---

**Note:** If the **Historical annotation set displayed** dialog box is displayed, see [“Troubleshooting image annotations”](#) on page 378.

---

## Measuring images

This section describes how to measure images.

### In this section

This section contains the following topics:

Topic	See Page
Drawing lines and measuring linear distances	153
Calibrating the measurement scale	156
Adding and measuring simple angles	156
Adding and measuring Cobb angles	158
Adding and measuring the Elliptical Region of Interest (ROI)	160
Measuring the pixel intensity of a point	162

### Drawing lines and measuring linear distances

To measure linear distances between two points on an image, you need to:

- Select the **Distance** tool
- Adjust the **Distance** tool properties (if necessary)
- Draw the line

#### Step 1: Select the Distance tool

To select the tool:

- 1 Click the **Annotate** icon on the main toolbar.



- 2 Click the **Distance** tool on the [Annotation Control Panel](#).



For other ways to select the tool, see [“Selecting an annotation tool”](#) on page 142.

## Step 2: Adjust the Distance tool properties (if necessary)

For an overview of annotation properties, see “Setting the annotation properties” on page 143.

To adjust the tool properties:

- 1 Click the **Color** box, and then specify the color of the annotation.
- 2 Click the **Thickness** box, and specify the line width.
- 3 Click the **Font size** box, and specify the font size of the measurement.
- 4 Specify where to place the measurement. The following table describes the available options:

Option	Meaning
Start	Place the measurement at the beginning of the line.
End	Place the measurement at the end of the line.

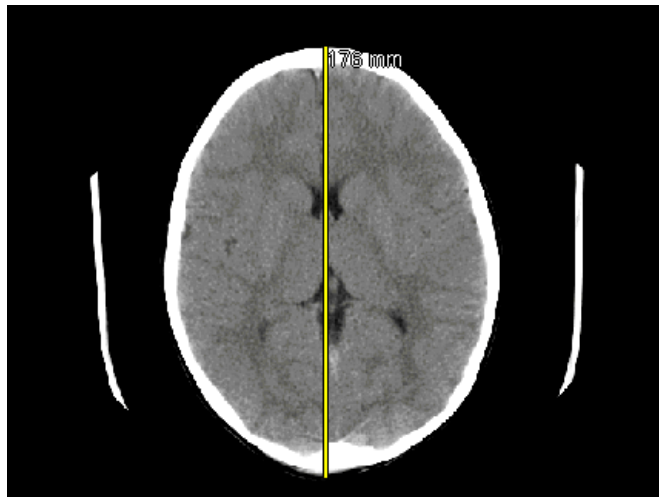
## Step 3: Draw the line

To measure a linear distance:

- 1 Drag the mouse pointer across the image where you want the line to appear.
- 2 Release the mouse button.

A line with the measurement it represents is displayed on the image.

Figure 5-39 A line with measurement



---

**Note:**

- Measurements smaller than 10 units are displayed with one decimal precision, for example, 8.7 mm. Measurements equal to or larger than 10 units are rounded off to the nearest integer (plain number). For example, 10.9 mm is expressed as 11 mm.
  - If the line contains no measurement unit, calibrate the scale. See [“Calibrating the measurement scale”](#) on page 155.
  - If the **Historical annotation set displayed** dialog box is displayed, see [“Troubleshooting image annotations”](#) on page 378.
- 

## Calibrating the measurement scale

A measurement scale is required in the following cases:

- To measure linear distances (See [“Drawing lines and measuring linear distances”](#) on page 153)
- To measure the area and perimeter of the Elliptical ROI (See [“Adding and measuring the Elliptical Region of Interest \(ROI\)”](#) on page 160)

The measurement scale is calibrated individually for each image. It can be calibrated automatically or manually.

### Automatically calibrating the measurement scale

The measurement scale may be automatically calibrated from the image **DICOM header**. If the scale indicator exists, the measurement scale for the image is automatically calibrated. For details, see [“Displaying or hiding the scale indicator”](#) on page 80.

### Manually calibrating the measurement scale

You need to calibrate the measurement scale only if the image does not contain it. To determine whether the image contains the measurement scale, use the **Distance** tool to measure a linear distance. See [“Drawing lines and measuring linear distances”](#) on page 153. If the measurement unit is not displayed, the image does not contain the measurement scale.

*Figure 5-40 Measurement scale is not calibrated*



To manually calibrate the measurement scale:

- 1 Select the **Calibrate** tool:
  - Click the **Annotate** icon on the main toolbar.



- Click the **Calibrate** tool on the [Annotation Control Panel](#).



For other ways to select the tool, see [“Selecting an annotation tool”](#) on page 142.

- 2 Click the **Color** box, and specify the color of the measurement scale.
- 3 Draw a line:
  - [Drag the mouse pointer](#) across the image.
  - Release the mouse button.

A line with a double-headed arrow is displayed on the image.

*Figure 5-41 A line with non-calibrated measurement*



**Note:** If Horizon Rad Station beeps, see [“Troubleshooting image annotations”](#) on page 378.

- 4 Enter the length of the line in the **Distance** box.
- 5 Click **Update**.

## Adding and measuring simple angles

You can draw two intersecting lines and measure the angle between them. For example, using the **Simple Angle** tool, you can measure a baby’s hip. The angle is measured in degrees. To measure an angle between two non-intersecting lines, see [“Adding and measuring Cobb angles”](#) on page 158.

You need to:

- Select the **Simple Angle** tool

- Adjust the **Simple Angel** tool properties (if necessary)
- Draw and measure the angle

### Step 1: Select the Simple Angle tool

To select the tool:

- 1 Click the **Annotate** icon on the main toolbar.



- 2 Click the **Simple Angle** tool on the [Annotation Control Panel](#).



For other ways to select the tool, see [“Selecting an annotation tool”](#) on page 142.

### Step 2: Adjust the Simple Angle tool properties (if necessary)

For an overview of annotation properties, see [“Setting the annotation properties”](#) on page 143.

To adjust the tool properties:

- 1 Follow steps 1-3 of [“Step 2: Adjust the Distance tool properties \(if necessary\)”](#) on page 154.
- 2 Specify where to place the measurement. The following table describes the available options.

Option	Meaning
Start	Place the measurement at the beginning of the first line segment.
Vertex	Place the measurement between the two line segments.
End	Place the measurement at the end of the second line segment.

### Step 3: Draw and measure the angle

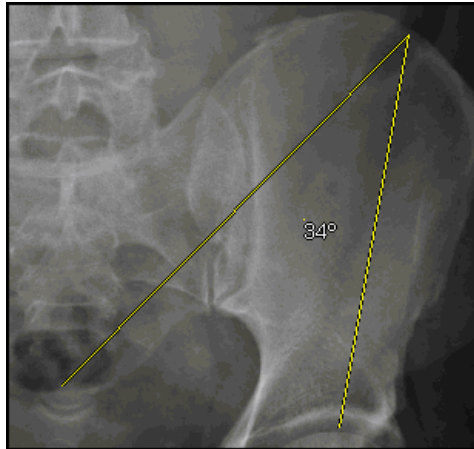
To draw and measure an angle:

- 1 Draw the first line segment (Start to Vertex).
  - [Drag the mouse pointer](#) across the image.
  - Release the mouse button.
- 2 Click where you want to place the end of the second line segment (Vertex to End).

An angle with the measurement it represents is displayed on the image. The measurement is rounded off to the nearest integer.

**Note:** If the **Historical annotation set displayed** dialog box is displayed, see [“Troubleshooting image annotations”](#) on page 378.

Figure 5-42 An angle with measurement



**Note:** If the **Historical annotation set displayed** dialog box is displayed, see [“Troubleshooting image annotations”](#) on page 378.

## Adding and measuring Cobb angles

A Cobb angle is the angle between two non-intersecting lines. Cobb angles are used to measure spinal scoliosis. They are measured in degrees. To measure an angle between two intersecting lines, see [“Adding and measuring simple angles”](#) on page 156.

You need to:

- Select the **Cobb Angle** tool
- Adjust the **Cobb Angle** tool properties (if necessary)
- Draw and measure the Cobb angle

### Step 1: Select the Cobb Angle tool

To select the tool:

- 1 Click the **Annotate** icon on the main toolbar.



- 2 Click the **Cobb Angle** tool on the [Annotation Control Panel](#).



For other ways to select the tool, see [“Selecting an annotation tool”](#) on page 142.

### Step 2: Adjust the Cobb Angle tool properties (if necessary)

For an overview of annotation properties, see [“Setting the annotation properties”](#) on page 143.

To adjust the tool properties:

- Follow steps 1-3 of [“Step 2: Adjust the Distance tool properties \(if necessary\)”](#) on page 154.

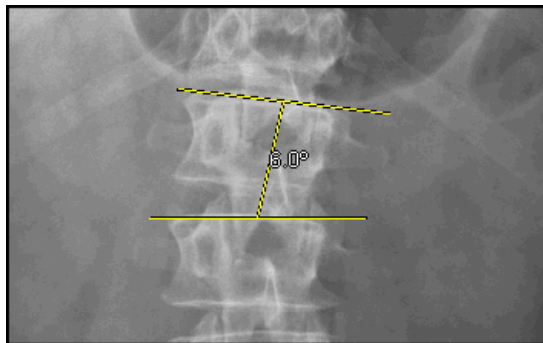
### Step 3: Draw and measure the Cobb angle

To draw and measure a Cobb angle:

- 1 Draw the first line segment.
  - [Drag the mouse pointer](#) across the image.
  - Release the mouse button.
- 2 Draw the second line segment.

A dotted line is displayed, connecting the two lines from the middle point. The Cobb angle measurement is displayed in the middle of the dotted line, rounded off to the nearest integer.

*Figure 5-43 A Cobb angle with measurement*



---

**Note:** If the **Historical annotation set displayed** dialog box is displayed, see [“Troubleshooting image annotations”](#) on page 378.

---



## Adding and measuring the Elliptical Region of Interest (ROI)

You can define an Elliptical region of interest (ROI), and measure its pixel intensity parameters, area, and perimeter. Pixel intensity enables you to determine the tissue type of the ROI. For details, see “Use of the pixel intensity values” on page 107. Elliptical ROI is exclusively used in CT studies.

You need to:

- Select the **Elliptical ROI** tool
- Adjust the **Elliptical ROI** tool properties (if necessary)
- Draw and measure the Elliptical ROI

### Values that you can measure

The following table describes the values that you can measure for the Elliptical ROI.

Value	Meaning
Average	The average pixel intensity values within the Elliptical ROI, in Hounsfield Units (HU) or Optical Density (OD).
Area	The area of the Elliptical ROI.
Min/Max	The minimum and maximum pixel intensity values within the Elliptical ROI, in Hounsfield Units (HU) or Optical Density (OD).
Perimeter	The perimeter of the Elliptical ROI.
Std Dev	The standard deviation pixel intensity values within the Elliptical ROI, in Hounsfield Units (HU) or Optical Density (OD).

### Step 1: Select the Elliptical ROI tool

To select the tool:

- 1 Click the **Annotate** icon on the main toolbar.



- 2 Click the **Elliptical ROI** tool on the **Annotation Control Panel**.



For other ways to select the tool, see [“Selecting an annotation tool”](#) on page 142.

### Step 2: Adjust the Elliptical ROI tool properties (if necessary)

For an overview of annotation properties, see [“Setting the annotation properties”](#) on page 143.

To adjust the tool properties:

- 1 Select the check boxes that correspond to the types of values you want to display. For a description, see [“Values that you can measure”](#) on page 160.
- 2 Follow steps 1 and 2 of [“Step 2: Adjust the Distance tool properties \(if necessary\)”](#) on page 154.

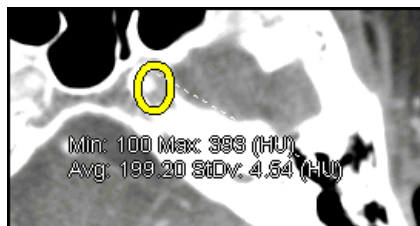
### Step 3: Draw and measure the Elliptical ROI

To measure an Elliptical ROI:

- 1 **Drag** the **mouse pointer** diagonally across the area of the image where you want the ellipse to appear.
- 2 Release the mouse button.

An Elliptical ROI is displayed with the values.

Figure 5-44 Elliptical ROI with values



---

**Note:**

- If the area and perimeter of the Elliptical ROI contain no measurement unit, calibrate the scale. See [“Calibrating the measurement scale”](#) on page 155.
  - If the **Historical annotation set displayed** dialog box is displayed, see [“Troubleshooting image annotations”](#) on page 378.
-

## Measuring the pixel intensity of a point

You can measure the **pixel** intensity of a point on an image, to determine the tissue type of a very small region of interest (ROI). For details, see [“Use of the pixel intensity values”](#) on page 107. The measurement is exclusively used in **CT** studies.

You need to:

- Select the **Point Analysis** tool
- Adjust the **Point Analysis** tool properties (if necessary)
- Measure the intensity

### Restriction for measuring the pixel intensity of a point

The pixel intensity value is provided for your information only, and is not added to the diagnostic image as a persistent **annotation**.

### Step 1: Select the Point Analysis tool

To select the tool:

- 1 Click the **Annotate** icon on the main toolbar.



- 2 Click the **Point Analysis** tool on the **Annotation Control Panel**.



For other ways to select the tool, see [“Selecting an annotation tool”](#) on page 142.

### Step 2: Adjust the Point Analysis tool properties (if necessary)

For an overview of annotation properties, see [“Setting the annotation properties”](#) on page 143.

To adjust the tool properties:

- 1 Click the **Color** box, and specify the color of the annotation.
- 2 Click the **Font size** box, and specify the font size of the measurement.

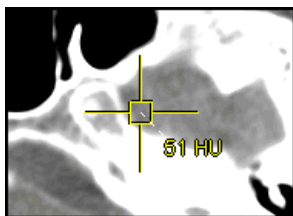
### Step 3: Measure the pixel intensity

To measure the pixel intensity of a point:

- Click the image where you want to measure the intensity.

The pixel intensity value of the point of interest is displayed, in **Hounsfield Units (HU)** or **Optical Density (OD)**.

Figure 5-45 Pixel intensity value of a point



**Note:** If the **Historical annotation set displayed** dialog box is displayed, see “[Troubleshooting image annotations](#)” on page 378.

## Sharing annotations

An [annotation](#) can be copied to other images. A copied annotation is referred to as a shared annotation.

### Restriction for sharing annotations

Images can be shared with the same [series](#) only.

### Annotations that you can share

You can share the following types of annotations:

- [Arrows](#)
- [Ellipses](#)
- [Covers](#)
- [Text](#)
- [Spine labels](#)

### Available annotation sharing scopes

The annotation sharing scope determines how annotations may be shared.

Annotation sharing scope	Meaning
Not shared	Do not share the annotation. When created, the annotation is added to the current image only.
Selected images within active series	Share the annotation only with the selected images in the <a href="#">series</a> . Once added, the annotation appears on the selected images in the series.

Annotation sharing scope	Meaning
Active series	Share the annotation with all the images in the series. Once added, the annotation appears on all images in the series

To specify the annotation sharing scope, see the following topics:

- “[Sharing annotations while annotating images](#)” on page 164
- “[Specifying the default annotation sharing scope](#)” on page 165
- “[Unsharing annotations](#)” on page 165

## Sharing annotations while annotating images

To share an annotation while annotating images:

- 1 Select the **tool** used to create the annotation you want to share:
  - Click the **Annotate** icon on the main toolbar.

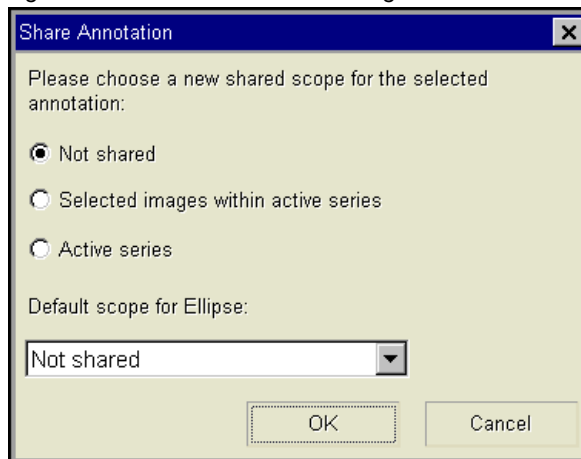


- Click the tool on the [Annotation Control Panel](#).

For other ways to select the tool, see “[Selecting an annotation tool](#)” on page 142.

- 2 Click **Share**. The **Share Annotation** dialog box is displayed.

Figure 5-46 Share Annotation dialog box



- 3 Select the annotation sharing scope. For details, see “[Available annotation sharing scopes](#)” on page 163.
- 4 Click **OK**.
- 5 Continue to add the annotation. See “[Annotating images](#)” on page 144.

## Specifying the default annotation sharing scope

For each annotation type, you can specify the default sharing scope. As a result, you do not have to specify how annotations are shared every time you [annotate images](#).

To specify the default annotation sharing scope:

- 1 Select the [tool](#) for which you want to specify the default annotation sharing scope:
  - Click the **Annotate** icon on the main toolbar.



- Click the tool on the [Annotation Control Panel](#).

For other ways to select the tool, see [“Selecting an annotation tool”](#) on page 142.

- 2 Click **Share**.

The **Share Annotation** dialog box is displayed. See [Figure 5-46](#) on page 164.

- 3 Click the **Default scope for** box, and then select the default annotation sharing scope. For details, see [“Available annotation sharing scopes”](#) on page 163.
- 4 Click **OK**.

## Unsharing annotations

You can unshare an annotation, to remove it from other images on which it appears.

To unshare an annotation:

- 1 Select the [tool](#) used to create the annotation you want to unshare:
  - Click the **Annotate** icon on the main toolbar.

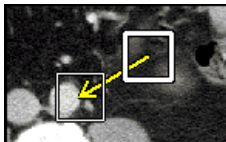


- Click the tool on the [Annotation Control Panel](#).

For other ways to select the tool, see [“Selecting an annotation tool”](#) on page 142.

- 2 Select the annotation that you want to unshare. The selected annotation is indicated by the square handles.

*Figure 5-47 An annotation is selected*



- 3 Click **Share**.

The **Share Annotation** dialog box is displayed. See [Figure 5-46](#) on page 164.

- 4 Click **Not shared**.

- 5 Click **OK**.

The annotation is removed from other images on which it appears.

## Moving annotations

You can move the following **annotation** items on an image:

- An annotation with its measurements and attached text (if any), or
- The measurement and attached text only

If the annotation is shared, it is moved on all the images on which it appears.

### Moving an annotation with its measurement and attached text

To move an annotation with its measurement and attached text:

- 1 Select the **tool** used to create the annotation you want to move:

- Click the **Annotate** icon on the main toolbar.



- Click the tool on the **Annotation Control Panel**.

For other ways to select the tool, see “[Selecting an annotation tool](#)” on page 142.

- 2 Click the annotation. The selected annotation is indicated by the square handles. See *Figure 5-47* on page 165.

- 3 **Drag** the selected annotation to the new location, and then release the mouse button.

The annotation is moved to the new location on the image. If the annotation has a measurement or text attached to it, the measurement or text is also moved with the annotation.

### Moving the measurement and attached text only

To move measurement and attached text only:

- 1 Select the **tool** used to create the annotation whose measurement and attached text you want to move:

- Click the **Annotate** icon on the main toolbar.



- Click the tool on the **Annotation Control Panel**.

For other ways to select the tool, see “[Selecting an annotation tool](#)” on page 142.

- 2 Click the measurement or attached text. The selected measurement or attached text is indicated by the square handles, and the **mouse pointer** changes to a cross with arrows.

- 3 **Drag** the selected measurement or text to the new location, and then release the mouse button.

The measurement or text is moved to the new location on the image.

## Resizing annotations

You can resize the following **annotations**:

- **Arrows**
- **Ellipses**
- **Covers**
- **Lines with linear distance measurement**
- **Simply angles**
- **Cobb angels**
- **Elliptical Region of Interest (ROI)**

### Restriction for resizing annotations

Depending on your user role, workstation, and **status** of the study, persistent annotations may not be resized.

Persistent annotations cannot not be resized.

### Steps for this task

To resize an annotation:

- 1 Select the **tool** used to create the annotation you want to resize:
  - Click the **Annotate** icon on the main toolbar.



- Click the tool on the **Annotation Control Panel**.

For other ways to select the tool, see “**Selecting an annotation tool**” on page 142.

- 2 Click the annotation. The selected annotation is indicated by the square handles. See *Figure 5-47* on page 165.
- 3 **Drag** the square handle, and then release the mouse button.

## Modifying annotations

Different **annotation tools** have different properties. For example, the **Text** tool consists of the following properties:

- Whether the text is persistent. For details on persistent annotations, see “**Persistent vs. temporary annotations**” on page 139.



- Color
- Font size

The properties that you can modify for an annotation are displayed on the [Annotation Control Panel](#). See [Figure 5-35](#) on page 143.

### Restrictions for modifying annotations

The following restrictions exist:

- If Power Scrolling is in use, annotations cannot be modified. For details, see [“Moving through a series using Power Scrolling”](#) on page 56.
- Persistent annotations, that are contained in existing SIPs, cannot be modified in Horizon Rad Station Distributed. Changes made to temporary annotations cannot be saved.

### Steps for this task

To modify the annotation properties:

- 1 Select the tool that corresponds to the type of annotation you want to modify:
  - Click the **Annotate** icon on the main toolbar.



- Click the tool on the Annotation Control Panel.

For other ways to select the tool, see [“Selecting an annotation tool”](#) on page 142.

- 2 Click the annotation. The selected annotation is indicated by the square handles. See [Figure 5-47](#) on page 165.
- 3 Modify the properties. For details, see the topic that corresponds to the annotation you want to modify:
  - [“Annotating images”](#) on page 144
  - [“Measuring images”](#) on page 153

The annotation is modified accordingly. If the annotation is shared, the modified annotation is displayed on the images on which it appears.

---

**Note:** If the **Historical annotation set displayed** dialog box is displayed, see [“Troubleshooting image annotations”](#) on page 378.

---

## Deleting annotations

You can delete an individual [annotation](#), or all annotations at once.

### Restrictions for deleting annotations

You can delete temporary annotations. Persistent annotations, contained in existing SIPs, cannot be deleted in Horizon Rad Station Distributed. For details on deleting persistent annotations using Horizon Rad Station Advanced, refer to the *Horizon Rad Station Advanced User's Guide*.

### Deleting an individual annotation

To delete an individual annotation:

- 1 Select the **Eraser** tool:
  - Click the **Annotate** icon on the main toolbar.



- Click the **Eraser** tool on the [Annotation Control Panel](#).



For other ways to select the tool, see [“Selecting an annotation tool”](#) on page 142.

- 2 Specify the scope of deletion. This is used only when you want to delete a shared annotation.

If...	Then...
Deleting the shared annotation from the current image	Click <b>Delete from the image only</b> .
Deleting the shared annotation from all shared images	Click <b>Delete from all shared images</b> .

- 3 Click the annotation you want to delete.

The annotation is deleted.

---

**Note:** If the **Historical annotation set displayed** dialog box is displayed, see [“Troubleshooting image annotations”](#) on page 378.

---

### Deleting all annotations

You can delete all temporary annotations from:

- A single image only
- Selected images only

- All images in the [series](#)

**Note:** Depending on the scope of deletion, a shared annotation can be deleted from a particular image only, or from all shared images. If you are not sure whether the annotation is shared, specify the scope of deletion before attempting to delete all annotations. Follow steps 1-3 of [“Deleting an individual annotation”](#) on page 169.

To delete all annotations:

- 1 Select the **Delete All** tool:

- Click the **Annotate** icon on the main toolbar.



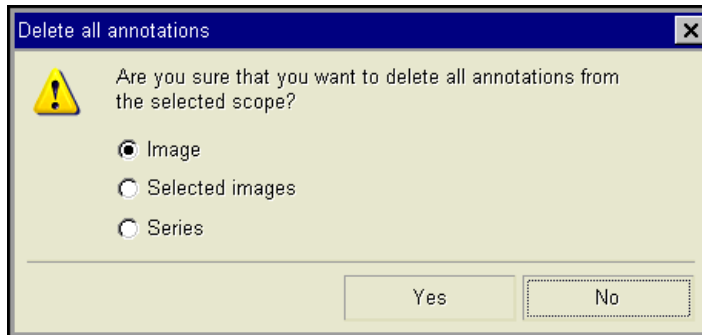
- Click the **Delete All** tool on the [Annotation Control Panel](#).



For other ways to select the tool, see [“Selecting an annotation tool”](#) on page 142.

The **Delete all annotations** dialog box is displayed.

Figure 5-48 Delete all annotations dialog box



- 2 Specify the images from which you want to delete the annotations:

If...	Then...
Deleting all annotations from the current image	Click <b>Image</b> .
Deleting all annotations from the selected images	Click <b>Selected images</b> .
Deleting all annotations from the series	Click <b>Series</b> .

- 3 Click **OK**.

The annotations are deleted.

**Note:** If the **Historical annotation set displayed** dialog box is displayed, see [“Troubleshooting image annotations”](#) on page 378.

---

## Using Stored Image Presentations

This section describes how to apply Stored Image Presentations (SIPs).

### In this section

This section contains the following topics:

Topic	See Page
<a href="#">Understanding Stored Image Presentations</a>	171
<a href="#">Applying a Stored Image Presentation</a>	172
<a href="#">Making a historical annotation set current</a>	175
<a href="#">Displaying the working annotation set</a>	178

## Understanding Stored Image Presentations

A Stored Image Presentation (SIP) is a collection of visual attributes associated with images. When an SIP is applied, the images are presented with these visual attributes.

### Attributes of an SIP

An SIP has the following attributes:

- Persistent [annotations](#), if any have been added (See [“Persistent vs. temporary annotations”](#) on page 139)
- Image style:
  - Region of Interest (ROI)
  - [Window/Level](#) values and applied LUT function (See [“About image contrast and brightness”](#) on page 106)
  - Image orientation

### Applying SIPs

Existing SIPs can be applied to images but new SIPs cannot be saved in Horizon Rad Station Distributed. For details, see [“Applying a Stored Image Presentation”](#) on page 172.

For details on saving new SIPs using Horizon Rad Station Advanced, refer to the *Horizon Rad Station Advanced User's Guide*.

## Applying a Stored Image Presentation

Stored Image Presentation (SIP) can be applied automatically and manually.

### Automatically applying an SIP

An SIP is automatically applied when a study is opened. The images are presented according to the [display protocol](#) that pertains to the study. For details on display protocols, see [“About display protocols”](#) on page 212.

By default, the most recently saved SIP for the study is applied. However, if the display protocol contains specific values for the SIP attributes, the specific values are applied. For details on SIP attributes, see [“Attributes of an SIP”](#) on page 171.

### Manually applying an SIP

You can manually apply previously saved SIPs on a case-to-case basis, for comparison or auditing purposes.

You can specify:

- Whether to apply an SIP to the entire study, or to selected [series](#) in the study
- Which attributes in the SIP to apply

To manually apply an SIP to the study:

- 1 Click the **Presentation** icon on the main toolbar.



- 2 From the menu that is displayed, select **Load Presentation**.

Alternatively, instead of step 1-2, do one of the following:

- Right-click an image and point to **Presentation**, and then select **Load Presentation**.

---

**Note:** Whether the **Presentation** option is displayed on the right-click menu depends on your right-click preferences. See [“Main toolbar preferences”](#) on page 296.

---

- Use your own [shortcut](#) to apply an SIP. To set up a shortcut, see [“Adding and modifying user shortcuts”](#) on page 304.

The **Load Presentation** dialog box is displayed, listing all the saved SIPs for the study.

Figure 5-49 Load Presentation dialog box

**Load Presentation**

Patient : Last name, First name ID: 1049323143[Main Hospital]  
 Active study : A: 19-Sep-2004 12:26, CT, Head

Select a presentation : List Filter : All

#	Presentation	Saved On	Saved By	Annotations	Styles
3	Scout images	29-Sep-2004, 16:40:48	Poon, Debbie	Saved	Saved
2	Auto Save	29-Sep-2004, 16:28:46	Poon, Debbie	Saved	Saved
1	Initial			Initial	Initial

Description of selected presentation :

Apply presentation to :  Entire active study  
 0 selected series in active study

Restore these presentation attributes :  Persistent annotations  
 Individual styles:  
 ROI  
 Window Level  
 Orientation

OK Cancel Apply

The following table describes the information about the SIPs listed in the **Load Presentation** dialog box.

Information	Meaning
#	SIP number. It is assigned to an SIP sequentially: <ul style="list-style-type: none"> <li>• 1 represents the initial SIP</li> <li>• 2 represents the SIP saved after the initial SIP. The larger the number, the more recently the SIP was saved.</li> </ul>
Presentation	Identification name of the SIP. It is the name that you entered when the SIP was saved.
Saved On	Date and time the SIP was saved.
Saved By	Name of the user who saved the SIP.

Information	Meaning (Continued)
Annotations	Whether the changes to the persistent <b>annotations</b> were saved in the SIP. If this is the initial SIP, <b>Initial</b> is displayed.
Styles	Whether changes to the image style (ROI, <b>Window/Level</b> , and image orientation) were saved in the SIP. If this is the initial SIP, <b>Initial</b> is displayed.  <b>Note:</b> Style changes pertain to both manual changes, or changes made by the <b>display protocol</b> .

- Click the **List filter** box, and specify which SIPs you want to list.

The following table describes the available filters.

Filter	Meaning
Last 5	List the following six SIPs: <ul style="list-style-type: none"> <li>The initial SIP</li> <li>The five most recently saved SIPs</li> </ul>
Last 10	List the following eleven SIPs: <ul style="list-style-type: none"> <li>The initial SIP</li> <li>The ten most recently saved SIPs</li> </ul>
Last 20	List the following 21 SIPs: <ul style="list-style-type: none"> <li>The initial SIP</li> <li>The 20 most recently saved SIPs</li> </ul>
All	List all the saved SIPs for the study.

The corresponding SIPs are listed.

- Click the SIP you want to apply.

The description of the selected SIP, if available, is displayed below the listed SIPs. The description is optional, and is saved with the SIP.

- Specify the scope of the SIP:

If...	Then...
Applying the SIP to all images in the study	Click <b>Entire active study</b> .
Applying the SIP to images in the selected series only	Click <b>selected series in study</b> .

- 6 Specify the SIP attributes you want to apply to the images:

If...	Then...
Applying the persistent annotations	Select the <b>Persistent annotations</b> check box.
Apply the image style	Select the check boxes that correspond to the styles you want to apply: <ul style="list-style-type: none"> <li>• <b>ROI</b></li> <li>• <b>Window Level</b></li> <li>• <b>Orientation</b></li> </ul>

- 7 Do one of the following:

- To apply the SIP, click **Apply**.
- To apply the SIP and close the **Load Presentation** dialog box, click **OK**.

The SIP is applied.

## Making a historical annotation set current

This section describes how to make a historical [annotation](#) set the working annotation set. An annotation set is a collection of annotations created during a review session.

### Pre-requisites

You need to be familiar with the following topic before performing this task:

- [“Applying a Stored Image Presentation”](#) on page 172

### Working vs. historical annotation sets

The following table describes the two types of annotation sets.

Annotation set	Meaning
Historical	A saved annotation set. Historical annotation sets cannot be modified.
Working	When you open a study, the most recently saved set of annotations is displayed. Once you edit the annotations, the annotation set becomes the working annotation set.  When you save a new <a href="#">Stored Image Presentation (SIP)</a> , the working annotation set becomes a historical annotation set.



## Reason for performing this task

Horizon Rad Station saves the working annotation set only, and ignores the historical sets. Therefore, to save a historical annotation set in an SIP, you need to make it the working annotation set first. Otherwise, you will not save the annotation set that you intend to save.

## Example of when to perform this task

In some situations, users who perform different tasks create their own **annotation** sets for the same study. As a result, they want different annotation sets to be displayed automatically when the study is opened.

If the users open a study and find that the displayed annotations are not the ones they want to look at, they need to restore their annotations, and then save their annotations as the most recent. Because Horizon Rad Station does not save historical annotation sets, the users first need to make their annotation set the working annotation set.

A possible scenario is described below:

User	Workflow
Radiologist	1 A <b>Radiologist</b> reviews a study, annotates the images to show the location of the patient's pathology, and saves the annotations in an SIP. The annotations become the most recently saved annotation set, and are displayed when the study is opened the next time.
Surgeon	2 The surgeon opens the study, changes the annotations to show the locations to operate, and saves the annotations in another SIP. The annotations created by the surgeon become the most recently saved annotation set, and the ones created by the radiologist become a historical annotation set.
Radiologist	3 The Radiologist compares the post-surgery conditions of the patient with the pre-surgery conditions. When the radiologist opens the pre-surgery study, the annotations created by the surgeon are displayed. As a result, the Radiologist displays the historical annotation set that shows the location of the patient's pathology, by applying the corresponding SIP, makes the historical annotation set the working annotation set, and then saves the SIP.

## Steps for making the historical annotation set current

You can make the historical annotation set the working annotation set for:

- A single image
- Selected images in a [series](#)
- All images in a series

To make the historical annotation set the working annotation set:

- 1 Click the **Presentation** icon on the main toolbar.



- 2 From the menu that is displayed, select **Make Current**.

Alternatively, instead of step 1-2, do one of the following:

- Right-click an image and point to **Presentation**, and then select **Make Current**.

---

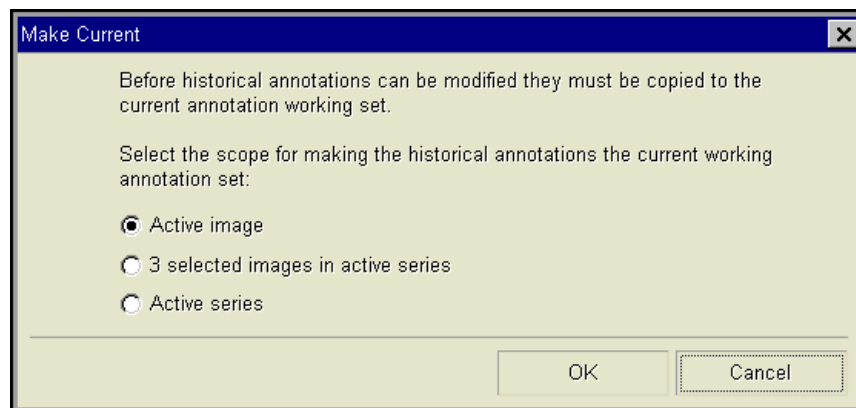
**Note:** Whether the **Presentation** option is displayed on the right-click menu depends on your right-click preferences. See [“Main toolbar preferences”](#) on page 296.

---

- Use your own [shortcut](#) to make the historical annotation set current. To set up a shortcut, see [“Adding and modifying user shortcuts”](#) on page 304.

The **Make Current** dialog box is displayed.

Figure 5-50 Make Current dialog box



- 3 Specify the images whose displayed annotations you want to make the working annotation set. The available options are:
  - **Active image**
  - **Selected images in active series**
  - **Active series**
- 4 Click **OK**.

## Displaying the working annotation set

The working annotation set can be displayed automatically and manually.

### Pre-requisites

You need to be familiar with the following topics before performing this task:

- “Applying a Stored Image Presentation” on page 172
- “Working vs. historical annotation sets” on page 175

### When to perform this task

After displaying a historical annotation set by applying a [Stored Image Presentation \(SIP\)](#), you can redisplay both temporary and persistent annotations in the working annotation set.

### Automatically displaying the working annotation set

Horizon Rad Station can be configured to automatically display the working annotation set when a historical annotation set is displayed and the user edits the annotation.

For details, contact McKesson Medical Imaging Group.

### Manually displaying the working annotation set

You can manually display the working annotation set for:

- All images in the study
- All images in a [series](#)

To display the working annotation set:

- 1 Click the **Presentation** icon on the main toolbar.



- 2 From the menu that is displayed, point to **Display Working Annotation Set**, and then specify the images for which you want to display the working annotation. The available options are:

- **Entire Study**
- **Active Series**

Alternatively, instead of step 1-2, do one of the following:

- Right-click an image and point to **Presentation, Display Working Annotation Set**, and then select the option.

---

**Note:** Whether the **Presentation** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

---

- Use your own [shortcuts](#) to display the working annotation set. To set up A shortcut, see [“Adding and modifying user shortcuts”](#) on page 304.

The working annotation set is displayed accordingly.

## Using Bookmarks

This section describes how to load Bookmarks.

### In this section

This section contains the following topics:

Topic	See Page
<a href="#">Understanding Bookmarks</a>	180
<a href="#">Applying a Bookmark</a>	181

## Understanding Bookmarks

A Bookmark saves the display properties of the [anchor study](#) and [reference studies](#) as a snapshot. Each Bookmark is associated with the anchor study. When a Bookmark is applied, the studies are presented with the display properties of studies.

### Attributes of a Bookmark

A Bookmark has the following attributes:

Attribute	Details
Layout	The layout includes: <ul style="list-style-type: none"> <li>• Number of viewports on each screen</li> <li>• Layout of images in each <a href="#">viewport</a></li> <li>• <a href="#">Series</a> placement in each viewport</li> </ul>
Temporary annotations	<a href="#">Annotations</a> that are not saved in a <a href="#">Stored Image Presentation (SIP)</a> . For details on SIPs, see " <a href="#">Understanding Stored Image Presentations</a> " on page 171.
Presentation settings	The presentation settings include: <ul style="list-style-type: none"> <li>• <a href="#">Window/Level</a> for each viewport</li> <li>• Zoom/Pan settings for each viewport</li> <li>• Image orientation (rotation and flip) for each viewport</li> <li>• Series display mode for each viewport</li> <li>• Linking status for each viewport and registration information</li> </ul>

Attribute	Details (Continued)
Information about all <b>Multi-Planar Reconstruction (MPR)</b> images	The information includes: <ul style="list-style-type: none"> <li>Plane in which the MPR image are created</li> <li>The range from which the MPR images are created</li> </ul>
<b>Cine clip</b> playback information	Playback mode, speed, and range

### Restrictions for applying Bookmarks

Existing bookmarks can be applied to studies, but new bookmarks cannot be saved in Horizon Rad Station Distributed. For details, see [“Applying a Bookmark”](#) on page 181.

For details on saving new bookmarks using Horizon Rad Station Advanced, refer to the *Horizon Rad Station Advanced User’s Guide*.

## Applying a Bookmark

You can apply a previously saved **Bookmark** to a study. All the studies to which the **Bookmark** applies are displayed exactly as they were when the **Bookmark** was saved. For details, see [“Attributes of a Bookmark”](#) on page 180.

---

**Note:** When you apply a **Bookmark**, Horizon Rad Station closes all studies to which the **Bookmark** does not apply.

---

### Steps for this task

To apply a **Bookmark**:

- 1 Click the **Bookmark** icon on the main toolbar.



- 2 From the menu that is displayed, select **Load Bookmark**.

Alternatively, instead of steps 1-2, do one of the following:

- Right-click an image and point to **Bookmark**, and then select **Load Bookmark**.

---

**Note:** Whether the **Bookmark** option is displayed on the right-click menu depends on your right-click preferences. See [“Main toolbar preferences”](#) on page 296.

---

- Use your own **shortcut** to apply a **Bookmark**. To set up a **shortcut**, see [“Adding and modifying user shortcuts”](#) on page 304.

The **Load Bookmark** dialog box is displayed, listing all the saved **Bookmarks** for the study.

Figure 5-51 Load Bookmark dialog box

**Patient : Last name, First name**

Anchor study : 19-Sep-2004 12:26, CT; Head

Current Monitors : 2 Color

Select a bookmark associated with the anchor study : List Filter : All

#	Bookmark Name	▲ Saved On	Saved By	Monitors
1	Manual Save	29-Sep-2004, 16:50:35	Poon, Debbie	2 Color

OK Cancel Apply

The following table describes the information about the listed Bookmarks.

Information	Meaning
#	Bookmark number. It is assigned to a Bookmark sequentially. The larger the number, the more recently the Bookmark was saved.
Bookmark Name	Identification name of the Bookmark.
Saved On	Date and time the Bookmark was saved.
Saved By	Name of the user who saved the Bookmark.
Monitors	Monitor configuration on which the Bookmark was saved.

- 3 Click the **List filter** box, and specify which Bookmarks you want to list.

The following table describes the available filters.

Filter	Meaning
Last 5	List the five most recently saved Bookmarks associated with the study.
Last 10	List the ten most recently saved Bookmarks associated with the study.
Last 20	List the 20 most recently saved Bookmarks associated with the study.

Filter	Meaning (Continued)
All	List all the saved Bookmarks associated with the study.

The corresponding Bookmarks are listed.

- 4 Click the Bookmark you want to apply.

---

**Note:** A Bookmark can be applied to the monitor configuration on which it was saved, or similar monitor configuration only. Bookmarks that cannot be applied on the monitor configuration of your workstation are dimmed.

---

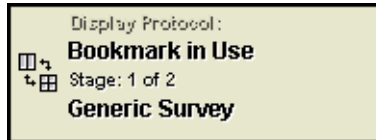


5 Do one of the following:

- To apply the Bookmark, click **Apply**.
- To apply the Bookmark and close the **Load Bookmark** dialog box, click **OK**.

The Bookmark is applied accordingly. **Bookmark in Use** is displayed on the **Display Protocol** button, to indicate that a Bookmark is applied to the study.

Figure 5-52 Loaded Bookmark indication



## Chapter 6 - Working with cine clips

This section describes how to view cine clips.

### In this section

This section contains the following topics:

Topic	See Page
<a href="#">About cine clips</a>	186
<a href="#">Viewing cine clips</a>	188

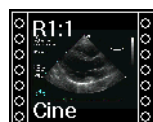
## About cine clips

A cine clip is a time-based image that contains a sequence of frames. Typically, cine clips are used in **Ultrasound (US)**, Radio Fluoroscopy (RF), and **X-Ray Angiography (XA)** studies.

### Indication of a cine clip

A cine clip is indicated by the thumbnail representing the **series**. For details, see **“Thumbnail appearance”** on page 351.

Figure 6-1 The series is a cine clip

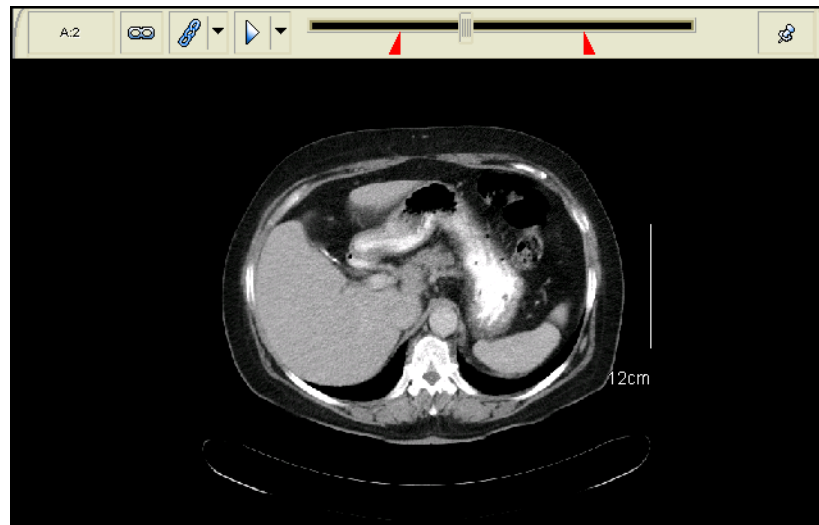


### Available cine clips display modes

Cine clips have two display modes. The following table describes the available cine clips display modes.

Cine clips display mode	Meaning
Cine	<p>The cine clip is displayed as a sequence of frames.</p> <p>The <b>chits</b> at the top of the <b>viewport</b> are replaced by the <b>Cine Playback control</b>. See <b>Figure 6-2</b>.</p> <p>For details, see <b>“Viewing cine clips”</b> on page 188.</p>
Standard	<p>The cine clip is displayed as a <b>series</b> of still images.</p> <p>Displaying a cine clip in Standard mode enables you to manipulate a frame as if you would an image. For details, see <b>“Working with images”</b> on page 73.</p>

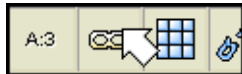
Figure 6-2 Viewport with Cine Playback control



### Steps for this task

To switch between the Cine mode and Standard mode:

- 1 Click the **Display Mode** icon at the top of the viewport.



- 2 From the menu that is displayed, select the cine clips display mode of your choice:
  - **Standard Mode**
  - **Cine Mode**

## Viewing cine clips

This section describes how to view cine clips.

### In this section

This section contains the following topics:

Topic	See Page
Playing cine clips	188
Pausing cine clips	189
Selecting the playback mode	190
Selecting the playback speed	191
Rewinding or fast forwarding a cine clip	192
Stepping through a cine clip	192
Playing a part of a cine clip	192

## Playing cine clips

You can play an individual [cine clip](#), or all cine clips displayed in the [viewports](#).

---

**Note:** If the [series](#) is linked to and shares a spatial relationship with another series, the linked series scrolls simultaneously. For details on series linking, see [“Working with linked series”](#) on page 64.

---

### Restriction for playing cine clips

To reduce flickering when playing a cine clip, each frame is displayed using the presentation settings ([Window/Level](#), [Zoom/Pan](#)) of the first frame.

### Playing an individual cine clip

To play an individual cine clip:

- Click the **Play** icon on the [Cine Playback control](#).



Alternatively, do one of the following:

- Click the arrow beside the **Play** icon, and then select **Play**.

- Right-click a frame and point to **Cine**, and then select **Play**.

---

**Note:** Whether the **Cine** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

---

- Use your own [shortcut](#) to play the cine clip. To set up a shortcut, see “[Adding and modifying user shortcuts](#)” on page 304.

The slider on the Cine Playback control moves from left to right, indicating the progress of the cine playback.

## Playing all cine clips

You can set up your own shortcut to play all cine clips that are displayed in the viewports. For details, see “[Adding and modifying user shortcuts](#)” on page 304.

## Pausing cine clips

[Cine clips](#) can be paused automatically or manually. You can manually pause an individual cine clip, or all cine clips that are playing.

### Automatically pausing cine clips

A cine clip is automatically paused when you do one of the following:

- Click or right-click a frame
- Use the mouse to change the [Window/Level](#) of a frame
- Use the mouse to zoom and/or pan a frame
- Rotate the mouse wheel

### Pausing an individual cine clip

To pause an individual cine clip:

- Click the **Pause** icon on the [Cine Playback control](#).



Alternatively, do one of the following:

- Click the arrow beside the **Pause** icon, and then select **Pause**.
- Right-click a frame and point to **Cine**, and then select **Pause**.

---

**Note:** Whether the **Cine** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

---

- Use your own [shortcut](#) to pause the cine clip. To set up a shortcut, see “[Adding and modifying user shortcuts](#)” on page 304.

The cine playback is paused, and the slider on the Cine Playback control indicates where the displayed frame is located in the cine clip.

## Pausing all cine clips

You can set up your own shortcut to pause all cine clips. For details, see [“Adding and modifying user shortcuts”](#) on page 304.

## Selecting the playback mode

The playback mode defines how a [cine clip](#) is played.

### Available playback modes

The following table describes the available playback modes in Horizon Rad Station.

Playback mode	Meaning
Loop Repeatedly	Play the cine clip continuously in a loop, until you manually stop or pause the cine clip.
Once Through	Play the cine clip once from beginning to end.
Wave	Play the cine clip from beginning to end, then reverse and play the clip from end to beginning.

### Steps for this task

To select the playback mode of a cine clip:

- Click the arrow beside the **Play** or **Pause** icon on the [Cine Playback control](#), and then select the playback mode. The check mark indicates the currently selected option. For details, see [“Available playback modes”](#) on page 190.

Alternatively, do one of the following:

- Right-click a frame and point to **Cine**, and then select the playback mode.

---

**Note:** Whether the **Cine** option is displayed on the right-click menu depends on your right-click preferences. See [“Main toolbar preferences”](#) on page 296.

---

- Use your own [shortcuts](#) to select the playback mode. To set up shortcuts, see [“Adding and modifying user shortcuts”](#) on page 304.

## Selecting the playback speed

The playback speed defines how fast a **cine clip** is played.

### Available playback speed options

The following table describes the available playback speed options in Horizon Rad Station.

Playback speed option	Meaning
Full Speed	Play the cine clip at its acquisition frame rate.
Half Speed	Play the cine clip at half of its acquisition frame rate.
Quarter Speed	Play the cine clip at a quarter of its acquisition frame rate.

The acquisition frame rate is stored in the **DICOM header**. If it is not specified, the full speed depends on the site configuration. For details, contact McKesson Medical Imaging Group.

### Steps for this task

To select the playback speed of a cine clip:

- Click the arrow beside the **Play** or **Pause** icon on the **Cine Playback control**, and then select the playback speed. The check mark indicates the currently selected option. For details, see “[Available playback speed options](#)” on page 191.

Alternatively, do one of the following:

- Right-click a frame and point to **Cine**, and then select the cine playback speed.

---

**Note:** Whether the **Cine** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

---

- Use your own **shortcuts** to select the playback speed. To set up shortcuts, see “[Adding and modifying user shortcuts](#)” on page 304.



## Rewinding or fast forwarding a cine clip

You can rewind or forward a **cine clip** while it is playing or paused. If the cine clip is paused, you can also step through the cine clip. For details, see “Stepping through a cine clip” on page 192.

### Steps for this task

To rewind or fast forward while a cine clip is playing:

- 1 **Drag** the slider on the Cine Playback control to where you want to start playing the cine clip.



- 2 If the cine clip is paused, resume the cine playback. To do so, click the **Play** icon on the Cine Playback control.



## Stepping through a cine clip

When a **cine clip** is paused, the slider on the **Cine Playback control** indicates where the displayed frame is located in the cine clip. You can step through it.

### Steps for this task

To step through a cine clip:

- Slowly **drag** the slider forward or backward.

## Playing a part of a cine clip

Sometimes you may want to play only the part of a **cine clip** that is diagnostically relevant, for example the first half or the middle part. In this case, you can set the range in which you want to play the cine clip.

### Steps for this task

To play a part of a cine clip:

- 1 Set the start range of the cine playback. To do so, **drag** the left frame marker on the Cine Playback control to where you want to start the playback.



- 2 Set the end range of the cine playback. To do so, drag the right frame marker to where you want to end the playback.



- 3 If the cine clip is paused, resume the cine playback. To do so, click the **Play** icon on the Cine Playback control.



The slider moves between the frame markers only, indicating that the cine clip is playing within the range that you have specified.



## Chapter 7 - Viewing patient information and documents

This section describes how to access patient information and documentation using the Patient Portfolio.

---

**Note:** Depending on the configuration at your site, the Patient Portfolio may not be available if Horizon Rad Station is accessed through an [EMR application](#). For details, contact McKesson Medical Imaging Group.

---

### In this section

This section contains the following topics:

Topic	See Page
<a href="#">About the Patient Portfolio</a>	196
<a href="#">Viewing patient and study information</a>	201
<a href="#">Viewing patient documentation</a>	205

## About the Patient Portfolio

This section provides an overview of the Patient Portfolio.

**Note:** Depending on the configuration at your site, the Patient Portfolio may not be available if Horizon Rad Station is accessed through an [EMR application](#). For details, contact your local system administrator.

### In this section

This section contains the following topics:

Topic	See Page
<a href="#">Purpose of the Patient Portfolio</a>	196
<a href="#">Patient Portfolio work area</a>	196

## Purpose of the Patient Portfolio

The Patient Portfolio enables you to access patient and study information, and the documentation associated with patient studies. You can view the following patient documentation:

- [Patient reports](#)
- [Voice clips](#)
- [Scanned documents](#)

## Patient Portfolio work area

This section identifies the components of the Patient Portfolio work area.

### In this section

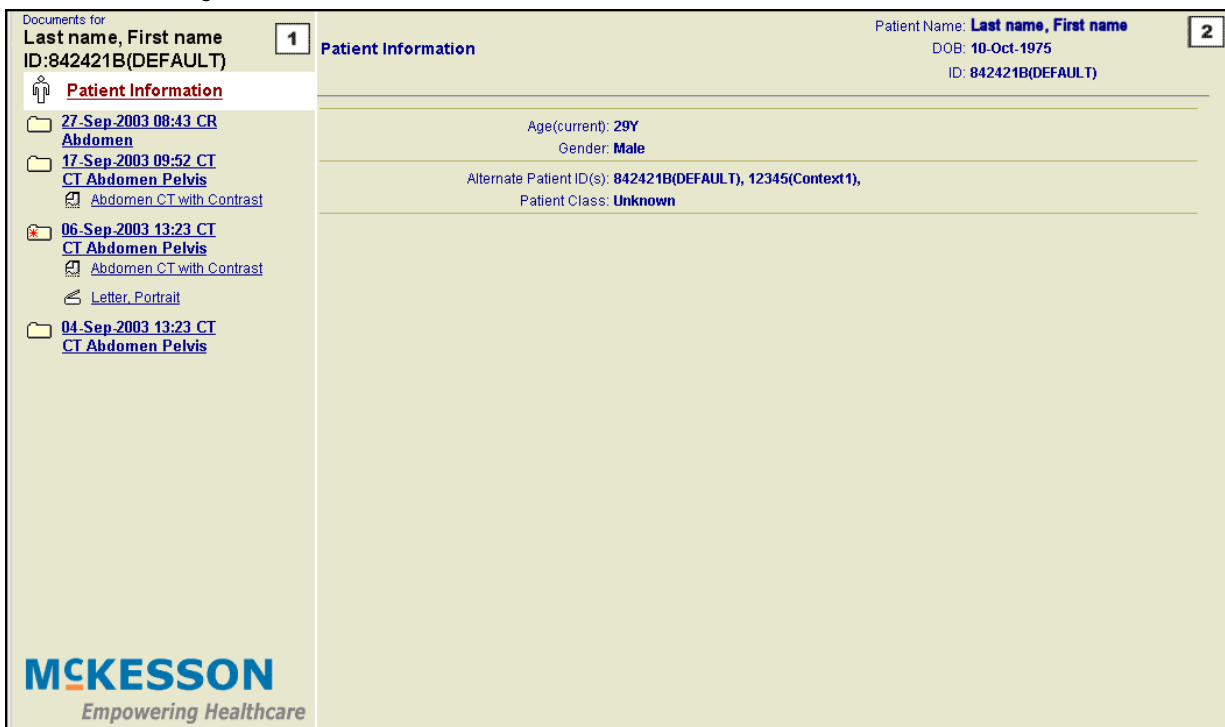
This section contains the following topics:

Topic	See Page
<a href="#">About the Patient Portfolio</a>	197
<a href="#">Patient Portfolio sidebar</a>	198
<a href="#">Patient Portfolio display area</a>	199

## About the Patient Portfolio

The Patient Portfolio displays the information about the patient whose study is currently open. In addition, it lists the patient documentation associated with the patient. See *Figure 7-1*.

Figure 7-1 Patient Portfolio work area



### Components of the Patient Portfolio work area

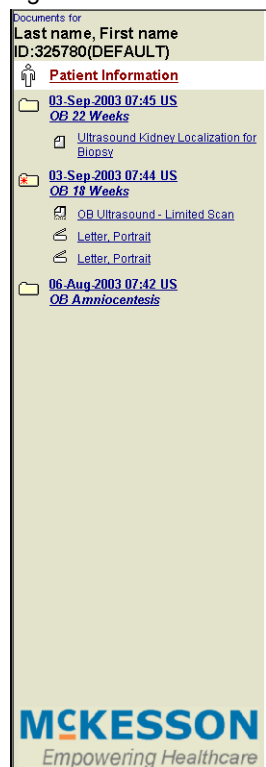
The following table describes the Patient Portfolio work area components. See *Figure 7-1* on page 197.

Component	Meaning
1. Patient Portfolio sidebar	Lists the Patient Information folder, study information folder, reports, voice clips, and scanned documents for the patient whose study is open or selected.
2. Document display area	Displays information about the selected patient or a patient document.

## Patient Portfolio sidebar


The Patient Portfolio sidebar consists of folders. Each folder provides access to patient information, study information, or patient documentation. The information and documentation available for each study are listed in the Patient Portfolio sidebar folders. See “Patient Portfolio sidebar folders” on page 198.

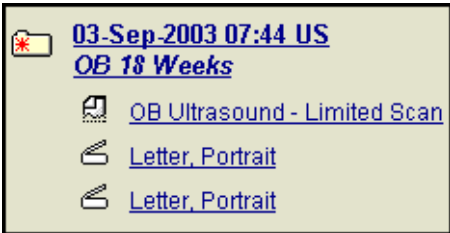
Figure 7-2 Portfolio sidebar



### Patient Portfolio sidebar folders

The following table describes the Patient Portfolio sidebar folders.

Folder	Description
<b>Patient Information folder</b> 	Displays all available patient information, for example the patient’s name, date of birth, and patient ID. See “Viewing patient information” on page 201.

Folder	Description (Continued)
<p><b>Study Information folder</b></p> 	<p>Displays the Study Information, including treatment, location, physician, and identification and tracking details. See <a href="#">“Viewing study information”</a> on page 203.</p> <p>Contains a list of <a href="#">reports</a>, <a href="#">voice clips</a>, and <a href="#">scanned documents</a> for the study. The type of documentation available is identified by an icon and link. For details, see <a href="#">“Viewing patient documentation”</a> on page 205.</p>

## Patient Portfolio display area

The Patient Portfolio display area displays the following information about the patient whose study is currently open:

- Patient information. See [“Viewing patient information”](#) on page 201.
- Study information. See [“Viewing study information”](#) on page 203.
- Preliminary and final reports. See [“Viewing and printing reports”](#) on page 205.
- Voice clips. For details, see [“Playing voice clips”](#) on page 208.
- Scanned documents. For details, see [“Viewing scanned documents”](#) on page 209.

## Displaying the Patient Portfolio

The Patient Portfolio is displayed from any open study. You can identify the studies which contain patient documents in the [Study list](#).

### Finding and opening studies containing patient documents from the Study list

To find and open a study containing patient documents:

- 1 Click the **Study List** icon on the toolbar to display the In-Box or Folder Finder.



For other ways to display the In-Box, see [“Steps for displaying the In-Box”](#) on page 19.



The column marker in the **Patient Documents** columns indicates which patient documentation the study contains. In addition, a column marker can indicate whether a study contains any QA issues

Column marker	Column description
<b>R</b>	<b>Reports</b> column. Indicates that the study contains at least one patient report. See also “ <a href="#">Viewing and printing reports</a> ” on page 205.
<b>S</b>	<b>Scanned Documents</b> column. Indicates that the study contains at least one scanned document. See also “ <a href="#">Viewing scanned documents</a> ” on page 209.
<b>A</b>	<b>Audio Clips</b> column. Indicates that the study contains at least one voice clip. See also “ <a href="#">Playing voice clips</a> ” on page 208.
<b>Q</b>	<b>QA Issues</b> column. Indicates that the studies contains one or more QA issues. See “ <a href="#">Viewing studies containing QA issues</a> ” on page 40.

- 2 Click the study you want to open.
- 3 Follow steps 2-3 of “[Displaying the Patient Portfolio from an open study](#)” on page 200.

The Patient Portfolio is displayed, listing the patient and study information, as well as the patient documentation associated with the patient. See *Figure 7-1*.

### Displaying the Patient Portfolio from an open study

To display the Patient Portfolio from an open study:

- 1 Follow steps 1-2 of “[Finding and opening studies containing patient documents from the Study list](#)” on page 199.
- 2 Open the study whose patient documentation you want to view. See “[Displaying the In-Box](#)” on page 16 and “[Displaying the Folder Finder](#)” on page 20.
- 3 Click the **Documents** icon on the main toolbar.



The Patient Portfolio is displayed, listing the patient and study information, as well as the patient documentation associated with the patient. See *Figure 7-1*.

## Viewing patient and study information

This section describes how to view patient and study information in the Patient Portfolio.

**Note:** Depending on the configuration at your site, the Patient Portfolio may not be available if Horizon Rad Station is accessed through an [EMR application](#). For details, contact McKesson Medical Imaging Group.

### In this section

This section contains the following topics:

Topic	See Page
<a href="#">Viewing patient information</a>	201
<a href="#">Viewing study information</a>	203

## Viewing patient information

The Patient Information page displays information about the patient associated with the open study.

### Steps for this task

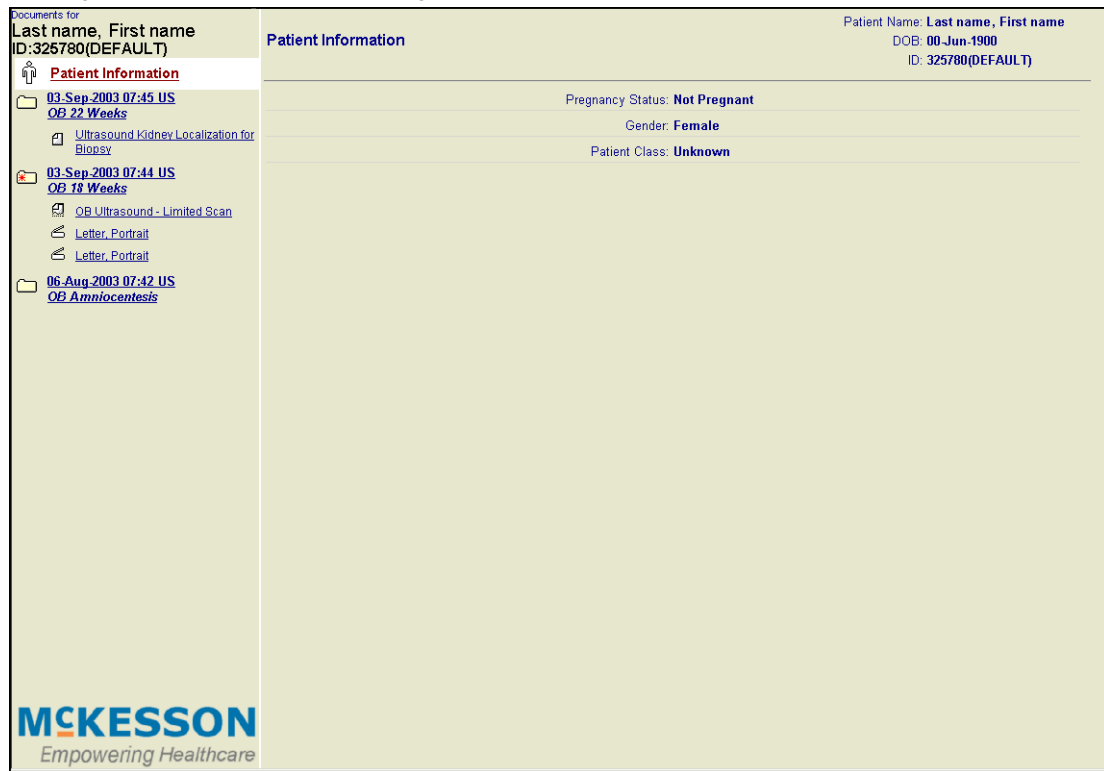
To display patient information:

- 1 Display the Patient Portfolio. See [“Displaying the Patient Portfolio”](#) on page 199.
- 2 In the [Portfolio sidebar](#), click the Patient Information folder.



The patient information is displayed in the [Portfolio display area](#) (see [Figure 7-3](#)). See [“Patient information displayed”](#) on page 202.

Figure 7-3 Patient Information page



### Patient information displayed

The following table describes the information that can be viewed.

Information	Description
Treatment related details	Message describing unresolved <b>QA issues</b> , <b>Contrast Allergies</b> , <b>Medical Alerts</b> , Pregnancy Status
Patient details	Age, Gender, <b>Ethnic Origin</b>
Tracking and identification information	Alternate <b>Patient IDs</b> , patient custom fields  <b>Note:</b> Depending on the configuration at your site, these fields may not be displayed.

**Note:** Additional patient information may be displayed depending on the configuration at your site.



## Viewing study information

The Study Information page displays information about the selected study. See *Figure 7-4*.

### Steps for this task

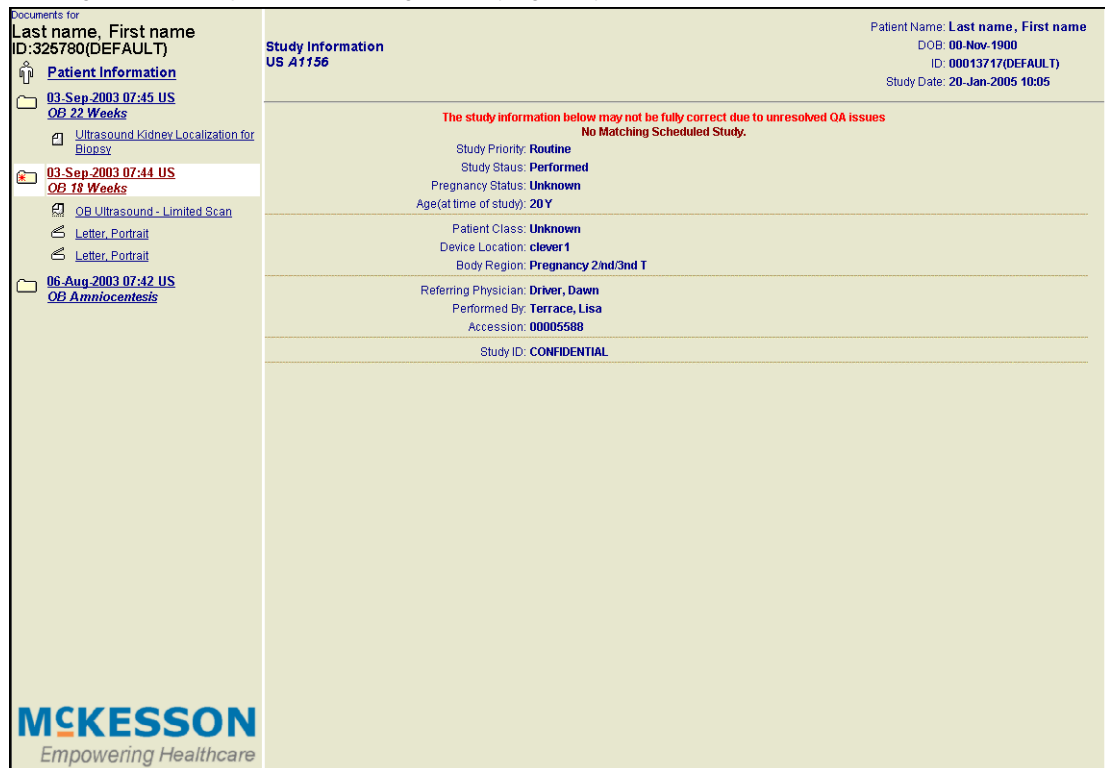
To display study information:

- 1 Display the Patient Portfolio. See “[Displaying the Patient Portfolio](#)” on page 199.
- 2 In the [Portfolio sidebar](#), click the **Study Information** folder for the study whose information you want to view.

Folder icon	Description
	Display study information for the open study.
	Display study information for other studies belonging to the same patient.

The study information is displayed in the [Portfolio display area](#) (see *Figure 7-4*). See “[Study information displayed](#)” on page 204.

*Figure 7-4 Study Information page displaying study information*



The screenshot shows a software interface with a sidebar on the left and a main content area on the right. The sidebar contains a list of documents for a patient, including 'Patient Information', '03-Sep-2003 07:45 US OB 22 Weeks', '03-Sep-2003 07:44 US OB 18 Weeks', and '06-Aug-2003 07:42 US OB Amniocentesis'. The main content area displays 'Study Information US A1156' and patient details: 'Last name, First name', 'DOB: 00-Nov-1900', 'ID: 00013717(DEFAULT)', and 'Study Date: 20-Jan-2005 10:05'. A red warning message states: 'The study information below may not be fully correct due to unresolved QA issues. No Matching Scheduled Study.' Below this, study details are listed: 'Study Priority: Routine', 'Study Status: Performed', 'Pregnancy Status: Unknown', 'Age(at time of study): 20Y', 'Patient Class: Unknown', 'Device Location: clever1', 'Body Region: Pregnancy 2nd/3rd T', 'Referring Physician: Driver, Dawn', 'Performed By: Terrace, Lisa', 'Accession: 00005588', and 'Study ID: CONFIDENTIAL'. The MCKESSON logo and 'Empowering Healthcare' tagline are at the bottom left.

## Study information displayed

The following table describes the information that can be viewed.

Information	Description
Treatment related details	Indications, Diagnosis, message describing QA issues, Contrast Allergies, Medical Alerts, Pregnancy Status
Location details	Patient Location, Patient Class, Device Location, Body region
Study details	Study ID
Associated physicians	Radiologist the study is assigned to, Radiologist who marks study as Reported, Requesting Physician, Referring Physician, and Technologist who captured the images
Patient details	Age, Gender, Ethnic Origin
Tracking and identification information	Alternate Patient IDs, Admission ID, Placer Order Number, Filler Order Number, Requested Procedure ID, Accession Number  <b>Note:</b> Depending on the configuration at your site, these fields may not be displayed.

**Note:** Additional study information may be displayed depending on the configuration at your site.

## Viewing patient documentation

This section describes how to access and view [patient reports](#), [voice clips](#), and [scanned documents](#).

**Note:** Depending on the configuration at your site, the Patient Portfolio may not be available if Horizon Rad Station is accessed through an [EMR application](#). For details, contact McKesson Medical Imaging Group.

### In this section

This section contains the following topics:

Topic	See Page
<a href="#">Viewing and printing reports</a>	205
<a href="#">Playing voice clips</a>	208
<a href="#">Viewing scanned documents</a>	209

## Viewing and printing reports

The Patient Portfolio enables you to view final and preliminary [reports](#). You can view and print a report.

### Display formats for reports

A report is displayed in either [HTML](#) or [Portable Document Format \(PDF\)](#). The display format is determined by the original format of the report when it was created.

The following table describes the display format for reports.

Original format	Format displayed
ASCII or RTF	HTML format, in the <a href="#">Web browser</a>
PDF	Viewed in PDF format, in Adobe <sup>®</sup> Reader <sup>®</sup>  <b>Note:</b> The Adobe <sup>®</sup> Reader <sup>®</sup> can be downloaded from the web site at: <a href="http://www.adobe.com">www.adobe.com</a>

### How are reports created

Reports are created in any of the following ways:



- In [Horizon Rad Station](#) or [Horizon Sono Station](#), using any of the following tools:
  - [Rad Report](#) composition tool. Reports created using Rad Report are saved in [Rich Text Format \(RTF\)](#). For details, refer to the *Rad Report User's Guide*.

- **Sono Report.** Reports created using Sono Report are saved in PDF. For details, refer to the *Sono Report User's Guide*.
- Through a third-party **Radiology Information System (RIS)** or other reporting system used at your site. Reports received from a third-party system are saved in **ASCII** format.

## Viewing a report

To view a report:

- 1 **Display the Patient Portfolio.** For details, see "Displaying the Patient Portfolio" on page 199.
- 2 In the Portfolio sidebar, click the report icon next to the report you want to view.

Icon	Meaning
	Final report. A report that cannot be modified or resaved.
	Preliminary report. A report that may still require modification after further review.  <b>Note:</b> Reports cannot be modified in Horizon Rad Station.

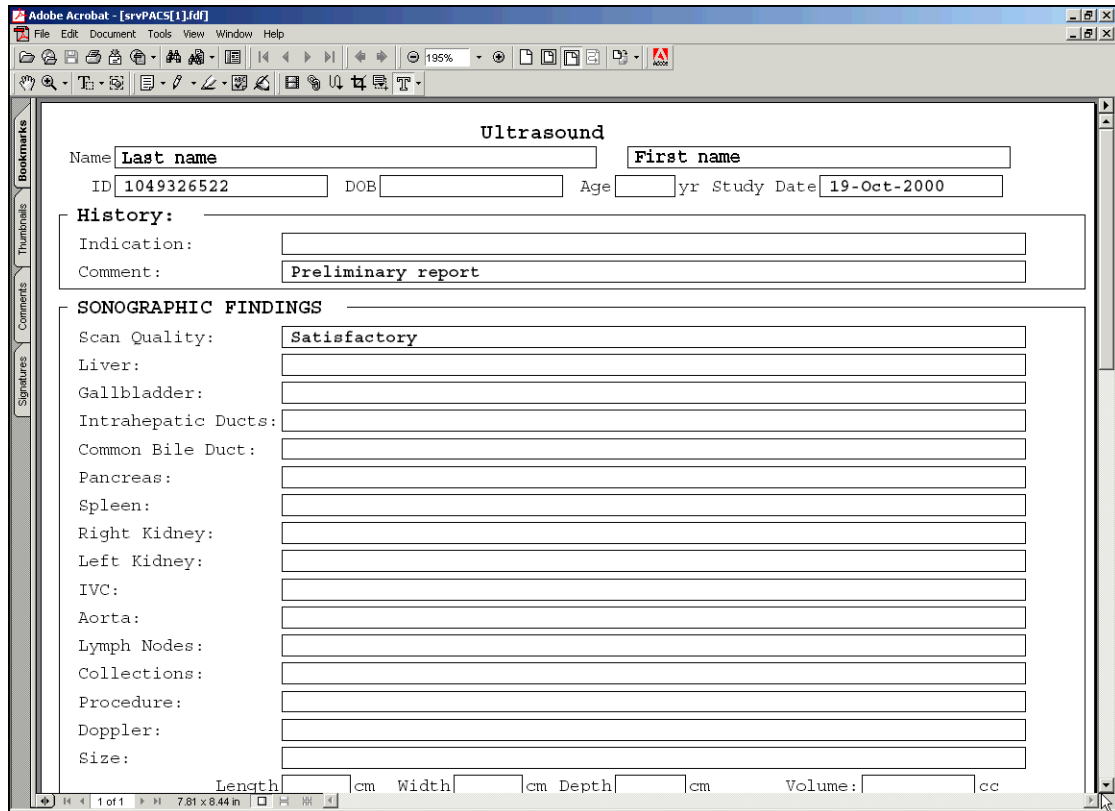
The report is displayed in one of the following formats:

- HTML in the **Portfolio display area**. See *Figure 7-5*.
- PDF in Adobe® Reader®. See *Figure 7-6*.

*Figure 7-5 Report displayed in HTML format in the Portfolio display area*

<b>Preliminary Report</b> <b>OB Ultrasound - Limited Scan</b> <a href="#">Show Printer-Friendly Version with Images (2 of 2)</a> <a href="#">Show Printer-Friendly Version without images</a>	Patient Name: <b>First name, Last name</b> DOB: <b>00-Jun-1970</b> ID: <b>325780(DEFAULT)</b> Study Date: <b>03-Sep-2003 07:44</b>
<b>Clinical Indication:</b> .	
<b>Findings:</b> Fetal cardiac motion is demonstrated. The biparietal diameter measures 20 cm. The abdominal circumference measures 2 cm. The femoral length measures 11 cm. This is consistent with a menstrual age of 2 wks. A limited ultrasound study was performed to obtain biometric data, solely for the purpose of establishing menstrual age. If clinically indicated, a complete obstetrical examination should be requested.	
Signed by: <b>Ali, Ali</b> Signed on: <b>11-May-2004 15:42</b>	

Figure 7-6 Report displayed in PDF



### Printing a report

To print a report:

- 1 Display the report you want to print. Follow steps 1-2 of “Viewing and printing reports” on page 205.
- 2 In the Document Display area, under the report heading, click the appropriate link. See *Figure 7-7*.

If...	Then...
You want to print the report with a preview of the first four flagged images of the study.	Click <b>Printer-Friendly Version with Images</b> .
You want to print the report without images.	Click <b>Printer-Friendly Version without images</b> .

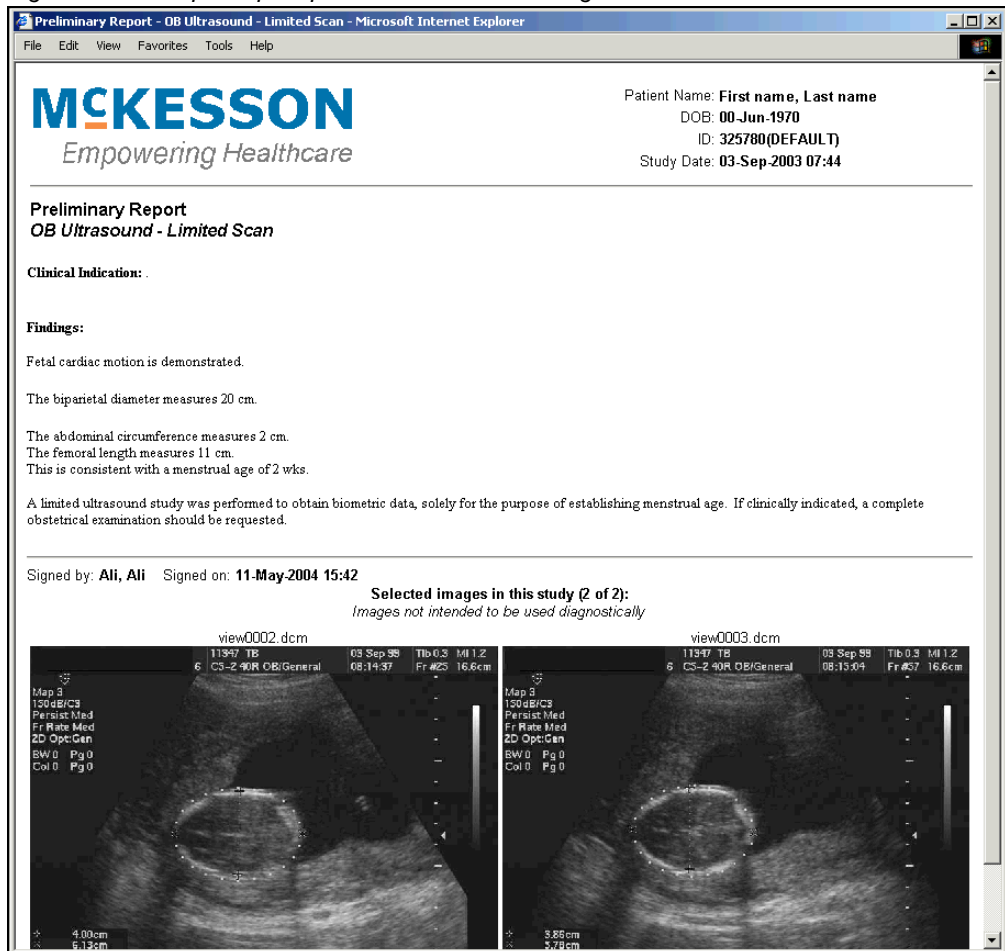
Figure 7-7 Links displayed under the report heading



A print preview of the report is displayed.



Figure 7-8 Example of print preview that includes images



- 3 On the Web browser menu bar, click **File**, and then select **Print**.  
The **Print** dialog box is displayed.
- 4 Select the printer to which you want to print, and then click **Print**.

## Playing voice clips

Voice clips are stored as **WAV** files. You can play a voice clip, using any of the following media players:

- [Windows Media® Player](#)
- [Apple QuickTime™ Player](#)

**Note:** To play WAV files using the Apple QuickTime™ Player, you need to install the Apple QuickTime™ Pro audio and video authoring software. For details, visit the Web site at: [www.apple.com](http://www.apple.com)

## Steps for this task

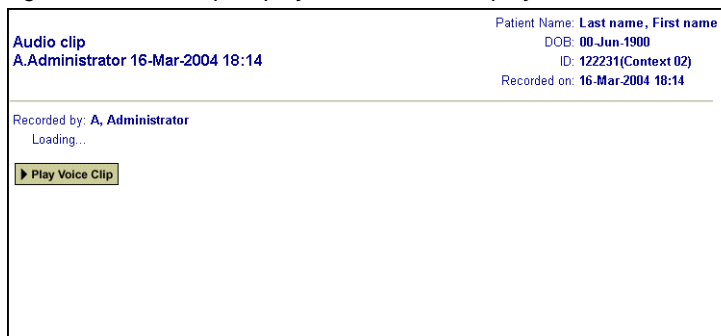
To play a voice clip:

- 1 Display the Patient Portfolio. For details, see “[Displaying the Patient Portfolio](#)” on page 199.
- 2 In the [Portfolio sidebar](#), click the link to the voice clip you want to play.

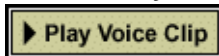


The voice clip and associated information are displayed in the [Portfolio display area](#). See [Figure 7-9](#).

Figure 7-9 Voice clip displayed in Portfolio display area



- 3 Click the **Play Voice Clip** button.



The voice clip is played in the appropriate media player.

- 4 To close the voice clip, close the media player.

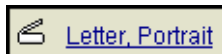
## Viewing scanned documents

Scanned documents are displayed in the [Portfolio display area](#).

### Steps for this task

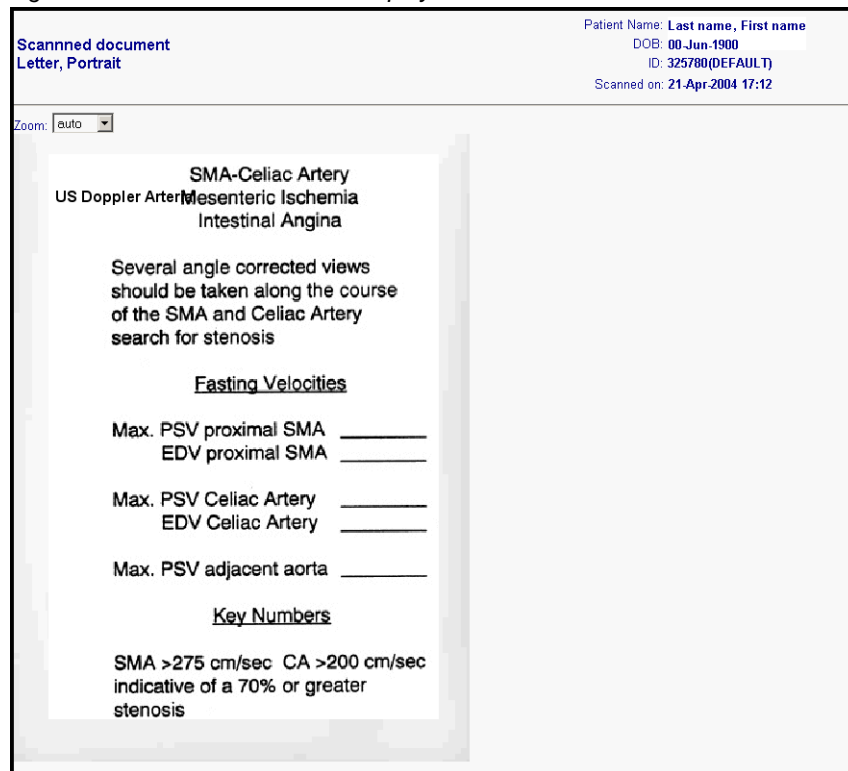
To view a scanned document:

- 1 Display the Patient Portfolio. For details, see “[Displaying the Patient Portfolio](#)” on page 199.
- 2 In the [Portfolio sidebar](#), click the link to the scanned document you want to view.

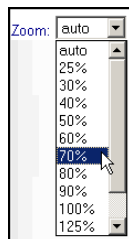


The scanned document is displayed in the Portfolio display area.

Figure 7-10 Scanned document displayed



- To zoom in or out on the document, click the arrow beside the **Zoom** box, and then select a zoom value.



The document is displayed, reflecting the adjusted zoom ratio.

- To zoom further, repeat step 3. Alternatively, rotate the mouse wheel.

## Chapter 8 - Working with display protocols

This section describes how to use and manage display protocols.

### In this section

This section contains the following topics:

Topic	See Page
About display protocols	212
Applying a display protocol	215
Creating a display protocol	221
Modifying the current display protocol	233
Deleting the current display protocol	241
Using the Display Protocol Editor	243
Working with display protocol stages	257
Managing display protocols	266
Saving a display protocol when closing a study	282

## About display protocols

This section describes display protocols.

### What is a display protocol

A display protocol is a digital equivalent of a hanging protocol. It contains an ordered collection of display protocol stages through which the user can navigate to view the [anchor study](#) and any [reference studies](#) in a useful and organized fashion. Display protocols enable [Radiologists](#) to perform [diagnosis](#) efficiently.

Display protocol stages can be interpreted as display protocols within display protocols. They define the image display area, by specifying which images are displayed and how they are displayed. For details, see [“Understanding display protocol stages”](#) on page 257.

### Attributes of a display protocol

The attributes of a display protocol are specified when the display protocol is created. For details, see [“Creating a display protocol”](#) on page 221.

Each display protocol contains the following attributes:

Attributes	Details
General Properties	<p>The General properties include:</p> <ul style="list-style-type: none"> <li>• Name and author of the display protocol</li> <li>• Ownership level (See <a href="#">“User, site, and system display protocols”</a> on page 214)</li> <li>• Anchor Applicability Rules, which are the filter criteria that determine whether the display protocol is relevant to an open study</li> <li>• Viewport layout and appearance options</li> </ul> <hr/> <p><b>Note:</b> Once a display protocol is created, the ownership level, and viewport layout and appearance options cannot be modified.</p>

Attributes	Details (Continued)
Reference Studies properties	<p>The Reference Studies properties, also known as the Reference Relevancy Rules, include:</p> <ul style="list-style-type: none"> <li>• Filter criteria that identify studies relevant for interpreting the <a href="#">anchor study</a></li> <li>• Whether to open the relevant studies automatically</li> </ul> <hr/> <p><b>Note:</b> Whether relevant studies are opened also depends on your display protocol preference. See "<a href="#">Display Protocol preference</a>" on page 293.</p> <hr/> <ul style="list-style-type: none"> <li>• Options that specify which relevant studies to open</li> </ul>
Layout and presentation settings of each display protocol stage	<p>The layout includes:</p> <ul style="list-style-type: none"> <li>• Number of <a href="#">viewports</a> on each screen</li> <li>• Layout of images in each viewport</li> <li>• <a href="#">Series</a> placement in each viewport</li> </ul> <p>The presentation settings include:</p> <ul style="list-style-type: none"> <li>• <a href="#">Window/Level</a> for each viewport</li> <li>• Zoom/Pan settings for each viewport</li> <li>• Image orientation (rotation and flip) for each viewport</li> <li>• Series display mode for each viewport</li> <li>• Linking status for each viewport</li> </ul> <p>For details, see "<a href="#">Attributes of a display protocol stage</a>" on page 257.</p>

## User, site, and system display protocols

There are three ownership levels at which display protocols can be saved:

Ownership level	Meaning
Personal	Predefined by individual users for their personal use. You can modify and delete your personal display protocols. To modify and delete display protocols that belong to other users, you must have the authority to modify site display protocols.
Site	Configured for the entire site. Site display protocols are available to all users at the site. Site display protocols cannot be created, modified, or deleted in Horizon Rad Station Distributed.
System	Shipped with Horizon Rad Station. System display protocols are available for all users, and cannot be created, modified, or deleted. However, you can create a personal or site display protocol based on a system display protocol.

## Applying a display protocol

This section describes how to apply a display protocol to an open study.

### In this section

This section contains the following topics:

Topic	See Page
Overview of applying a display protocol	215
Automatically applying a display protocol	216
Manually applying a display protocol	218

### Overview of applying a display protocol

When a [display protocol](#) is applied to a study, Horizon Rad Station performs the following tasks:

Task	Details
1 Identifies relevant studies	<p>Horizon Rad Station uses the Reference Studies properties of the display protocol to identify studies relevant for interpreting the <a href="#">anchor study</a>. If configured to do so, Horizon Rad Station opens those studies as <a href="#">reference studies</a>. Depending on the configuration, up to nine most recent relevant studies can be automatically opened.</p> <hr/> <p><b>Note:</b> Depending on the site configuration, <a href="#">grouped studies</a> may be considered as relevant studies. In this case, they may also be automatically opened. For details, contact McKesson Medical Imaging Group.</p> <hr/>
2 Displays images in the anchor study and reference studies	Horizon Rad Station displays images in the anchor study and reference studies, according to the layout and presentation settings of the display protocol.

For details, see "[Attributes of a display protocol](#)" on page 212.



## Two ways to apply a display protocol

Display protocols can be applied automatically and manually. For details, see the following topics:

- “Automatically applying a display protocol” on page 216
- “Manually applying a display protocol” on page 218

## Automatically applying a display protocol

When you open a study, Horizon Rad Station automatically determines a list of relevant [display protocols](#), and applies the most appropriate one to the study. For details, see “[Overview of applying a display protocol](#)” on page 215.

## What is a relevant display protocol

Relevancy of display protocols is determined by the Anchor Applicability Rules, which are the following filter criteria:

- Modalities
- Body Regions
- Procedure Types

When you open a study, Horizon Rad Station compares the study information with the filter criteria of all the display protocols that are available to you. A display protocol is relevant to a study when the study information matches all the filter criteria.

Filter criterion to match	Meaning
Modality	The <a href="#">modality</a> of the study matches at least one of the modalities specified in the display protocol.
Body Regions	At least one of the <a href="#">body regions</a> associated with the study matches at least one of the body regions specified in the display protocol.
Procedure Types	At least one of the <a href="#">procedure types</a> associated with the study matches at least one of the procedure types specified in the display protocol.

The following table describes the conditions when a display protocol becomes relevant.

If...	Then...
A display protocol contains the <a href="#">CT</a> modality as the filter criterion	The display protocol becomes relevant when you open a CT study.
A display protocol contains the Head body region as the filter criterion	The display protocol becomes relevant when you open a study associated with the Head body region.

If...	Then... (Continued)
A display protocol contains the Bone Density Spine procedure type as the filter criterion	The display protocol becomes relevant when you open a study associated with the Bone Density Spine procedure type.
A display protocol contains the CT modality and Head body region as the filter criteria	The display protocol becomes relevant when you open a CT study associated with the Head body region.

If the information is not available, the corresponding filter criterion is ignored. For example, if a study is not associated with any body region, Horizon Rad Station checks the study information against the Modalities and Procedure Type filters criteria only.

The filter criteria are specified when the display protocol is created. For details, see [“Specifying the filter criteria”](#) on page 225.

### Selecting the most appropriate display protocol

A study can have more than one relevant display protocol. The ranking determines which relevant display protocol is automatically applied when the study is opened. The default display protocol is the one that has the highest ranking. You can set a display protocol as the default when you create it. See [“Creating a display protocol”](#) on page 221.

---

#### Note:

- By default, the built-in Generic display protocol is applied. See [“Applying the Generic display protocol”](#) on page 217.
  - The ranking of existing display protocols can be modified. See [“Modifying the ranking of the current display protocol”](#) on page 239 and [“Arranging the ranking of display protocols”](#) on page 275.
- 

### Applying the Generic display protocol

The Generic display protocol is a built-in display protocol for studies of any **modality**. It provides a generic way to display studies. By default, it has the highest ranking and is automatically applied when a study is opened.

When the Generic display protocol is applied, Horizon Rad Station performs the following tasks:

Task	Details
1 Identifies and opens relevant studies	<p>A study is considered relevant for interpreting the anchor study when:</p> <ul style="list-style-type: none"> <li>The study has at least one <b>body region</b> in common with the <b>anchor study</b>, and</li> <li>The study was performed within the last six months.</li> </ul> <p>Up to two most recent relevant studies can be opened.</p>
2 Displays images using the most appropriate way	<p>Based on the <b>modality</b> of the studies, Horizon Rad Station identifies the most appropriate way to display the images, and displays the images accordingly. This also includes creating <b>display protocol stages</b>. For details on display protocol stages, see “<b>Understanding display protocol stages</b>” on page 257.</p>

**Note:** The Generic display protocol cannot be modified or deleted by any user. However, you can create a display protocol based on the Generic display protocol. See “**Creating a display protocol**” on page 221.

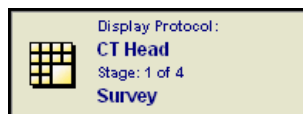
## Manually applying a display protocol

When you open a study, a **display protocol** is automatically applied to it. For details, see “**Automatically applying a display protocol**” on page 216. However, you can manually apply a different display protocol.

### Applying a display protocol

To manually apply a display protocol to the study:

- 1 Click the **Display Protocol** button at the top of the **work area**. The button displays information about the currently applied display protocol.



- 2 Apply the display protocol of your choice:

If...	Then...
Applying a relevant display protocol, which matches the <b>modality</b> , <b>body region</b> , and <b>procedure type</b> of the study	From the menu that is displayed, select the display protocol of your choice.  <b>Note:</b> The display protocols are listed according to their ranking.
Applying a display protocol that matches only the modality of the study	Point to <b>Modality Only</b> , and select the display protocol.
Applying a display protocol that matches only the modality and body region of the study	Point to <b>Modality and Body Regions</b> , and select the display protocol.

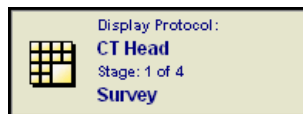
**Note:** If the display protocol you want to apply is not listed, follow the steps in “[Applying a non-listed display protocol](#)” on page 219.

The display protocol is applied. For details, see “[Overview of applying a display protocol](#)” on page 215.

### Applying a non-listed display protocol

To apply a non-listed display protocol:

- 1 Click the **Display Protocol** button at the top of the **work area**.

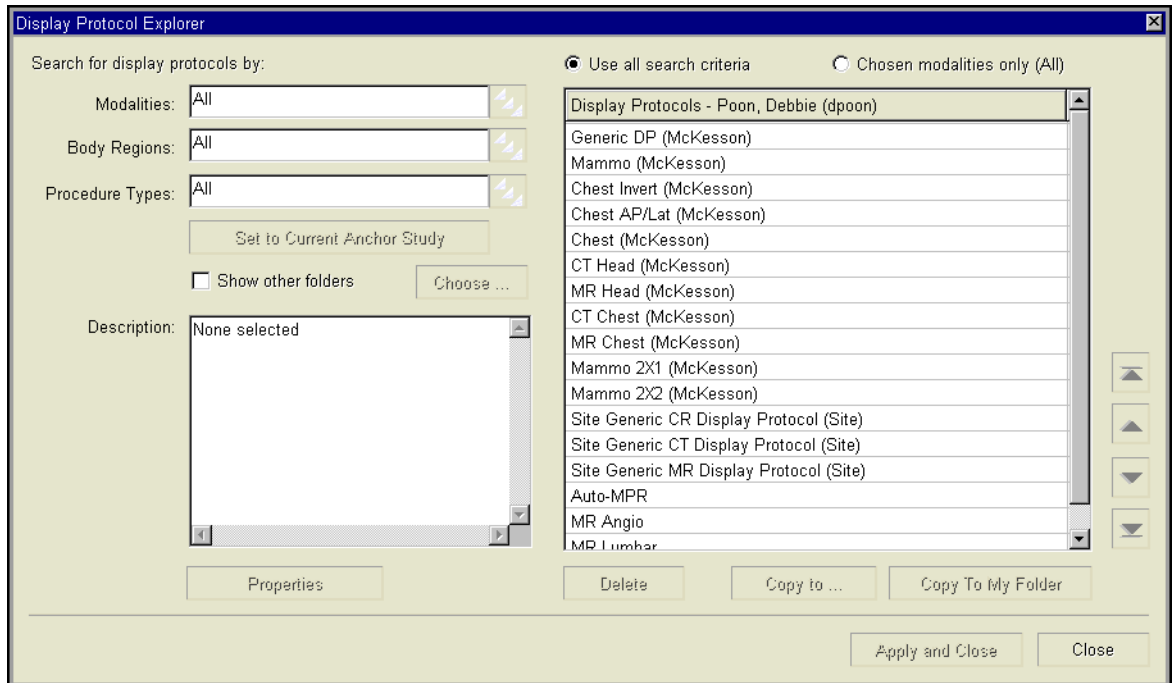


- 2 From the menu that is displayed, select **Show All**.

The **Display Protocol Explorer** is displayed, listing all the existing display protocols.

**Note:** The **Display Protocol Explorer** enables you to manage display protocols from a single location. For details, see “[Managing display protocols](#)” on page 266.

Figure 8-1 All existing display protocols are listed



- 3 Click the display protocol that you want to apply.
- 4 Click **Apply and Close**.

The display protocol is applied. For details, see [“Overview of applying a display protocol”](#) on page 215.

## Creating a display protocol

This section describes how to create a display protocol.

### In this section

This section contains the following topics:

Topic	See Page
Overview of creating a display protocol	221
Step 1: Specifying the layout and presentation settings	221
Step 2: Specifying the General properties	222
Step 3: Specifying the Reference Studies properties	230

### Overview of creating a display protocol

To create a [display protocol](#), modify the attributes of an existing display protocol. For details on the display protocol attributes, see [“Attributes of a display protocol”](#) on page 212.

See the following topics:

- [“Step 1: Specifying the layout and presentation settings”](#) on page 221
- [“Step 2: Specifying the General properties”](#) on page 222
- [“Step 3: Specifying the Reference Studies properties”](#) on page 230

### Restrictions for creating a display protocol

You cannot create a system or site display protocol in Horizon Rad Station Distributed. See also [“User, site, and system display protocols”](#) on page 214.

## Step 1: Specifying the layout and presentation settings

First you need to specify layout and presentation settings of a new display protocol.

### Steps for this task

To specify the layout and presentation settings of the new display protocol:

- 1 Apply the [display protocol](#) that you want to modify. See [“Manually applying a display protocol”](#) on page 218.

- 2 Navigate to the [stage](#) whose layout and presentation settings you want to modify. See [“Navigating the display protocol stages”](#) on page 259.

---

**Note:** You can add, modify, and delete a display protocol stage, or rearrange the stage order. See [“Working with display protocol stages”](#) on page 257.

---

- 3 Modify the layout:
  - Number of [viewports](#) on each screen (See [“Setting the screen layout”](#) on page 62)
  - Layout of images in each viewport (See [“Setting the viewport layout”](#) on page 63)
  - [Series](#) placement in each viewport (See [“Displaying series”](#) on page 44)
- 4 Modify the presentation settings:
  - [Window/Level](#) values and applied LUT function (See [“Changing the image contrast and brightness”](#) on page 105)
  - Zoom/Pan settings (See [“Zooming and panning images”](#) on page 83)
  - Image orientation (See [“Reorienting images”](#) on page 91)
  - Series display mode (See [“Selecting the series display mode”](#) on page 49)
  - Linking status (See [“Linking and unlinking series”](#) on page 64)

---

**Note:** You can also use the **Display Protocol Editor** to specify the following properties:

- Series placement
- Window/Level, Zoom/Pan settings, and image orientation

See [“About the Display Protocol Editor”](#) on page 243.

---

- 5 Repeat steps 2-4 for each stage whose layout and presentation settings you want to modify.

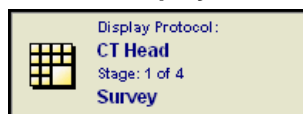
## Step 2: Specifying the General properties

After [specifying the layout and presentation settings](#) of the new [display protocol](#), specify its General properties. For details on the display protocol attributes, see [“Attributes of a display protocol”](#) on page 212.

### Steps for this task

To specify the General properties of the new display protocol:

- 1 Click the **Display Protocol** button at the top of the [work area](#).



- 2 From the menu that is displayed, select **Save as New**.

The **Save Display Protocol As** dialog box is displayed.

Figure 8-2 Save Display Protocol As dialog box

The dialog box is titled "Save Display Protocol As" and has a close button (X) in the top right corner. It features a tabbed interface with the "General" tab selected. The "Reference Studies" section is expanded, showing a list of study types with "CT Head" selected. Below this, there are checkboxes for "Default display for this type of study", "Use all free space for extra series placement", and "Save series placement and appearance". The "Save series placement and appearance" checkbox is checked, and it has three sub-checkboxes: "Window/Level", "Zoom/Pan", and "Orientation", all of which are also checked. At the bottom of the dialog are "OK" and "Cancel" buttons.

- 3 Click the **General** tab.
- 4 In the **Name** box, enter the name of the display protocol. You can enter up to 255 characters.

**Note:** The display protocol must not have the same name as any existing display protocol at the same ownership level. For example, two personal display protocols cannot have the same name. However, a personal display protocol can have the same name as a site display protocol. The ownership level of the display protocol is specified in step 5.

- 5 Specify the ownership level of the display protocol. The available options are:
  - **Personal**
  - **Site**

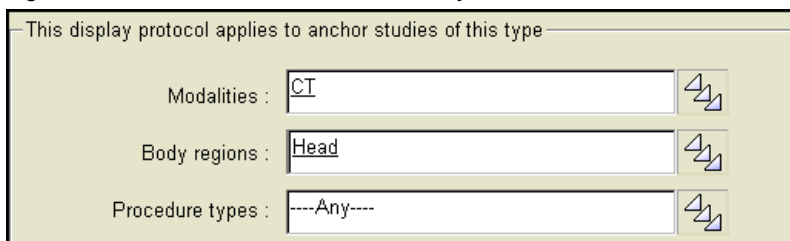


For details on the ownership levels, see “[User, site, and system display protocols](#)” on page 214.

**Note:** The **Site** option is available only if you have the authority to save site display protocols. For details, contact your system administrator.

- Specify the Anchor Applicability Rules. The Anchor Applicability Rules are filter criteria that determine whether the display protocol is relevant to a study. See “[Specifying the filter criteria](#)” on page 225.

Figure 8-3 Filter criteria for a relevant study



- Specify whether this display protocol is the default for studies that match the filter criteria. The default display protocol has the highest ranking, and is automatically applied when the studies are opened.

If...	Then...
Setting the display protocol as the default	Select the check box <b>Default display protocol for this type of study.</b>
Not setting the display protocol as the default	Clear the check box <b>Default display protocol for this type of study.</b>  <b>Note:</b> Clearing the check box ranks the display protocol to the bottom of the list. You can modify the ranking at a later time. See “ <a href="#">Arranging the ranking of display protocols</a> ” on page 275.

- Specify whether to fill empty viewports with [series](#) from the [anchor study](#). This option determines whether the empty [viewports](#) remain empty when a user cycles series. For details, see “[About cycling series](#)” on page 57

If...	Then...
Filling empty viewports	Select the check box <b>Use all free space for extra series placement.</b>
Not filling empty viewports	Clear the check box <b>Use all free space for extra series placement.</b>

- 9 Specify whether to save the series placement:

If...	Then...
Saving the series placement	Select the check box <b>Save series placement and appearance</b> .
Not saving the series placement (Displaying the series by their order)	Clear the check box <b>Save series placement and appearance</b> .

- 10 If you have configured Horizon Rad Station to save the series placement in step 9, specify the presentation settings that you want to save for the viewports:

If...	Then...
Saving the <a href="#">Window/Level</a>	Select the <b>Window/Level</b> check box. If the check box is not selected, the Default Window/Level is used. For details, see " <a href="#">Default Window/Level</a> " on page 110.
Saving the Zoom/Pan settings	Select the <b>Zoom/Pan</b> check box. If the check box is not selected, the displayed image is zoomed to fit the viewport.
Saving the image orientation (rotation and flip)	Select the <b>Orientation</b> check box. If the check box is not selected, the image is displayed using the orientation configured for your site.

## Specifying the filter criteria

Every [display protocol](#) contains two sets of filter criteria:

- For the General properties, the filter criteria determine whether a display protocol is relevant to an open study. For details, see "[What is a relevant display protocol](#)" on page 216 and "[Step 2: Specifying the General properties](#)" on page 222.
- For the Reference Studies properties, the filter criteria identify studies relevant for interpreting the [anchor study](#). For details, see "[Step 3: Specifying the Reference Studies properties](#)" on page 230.

---

**Note:** The filter criteria for the Reference Studies properties also determine which studies are listed as relevant when you click the [Study Information bar](#). For details, see "[Manually opening additional studies for the same patient](#)" on page 50.

---

The filter criteria include [Modalities](#), [Body Regions](#), and [Procedure Types](#).

Each filter criterion can have one or more values. If no values is specified, the filter criterion is set to **Any**, and a match is assumed.

### Specifying the Modalities filter criterion

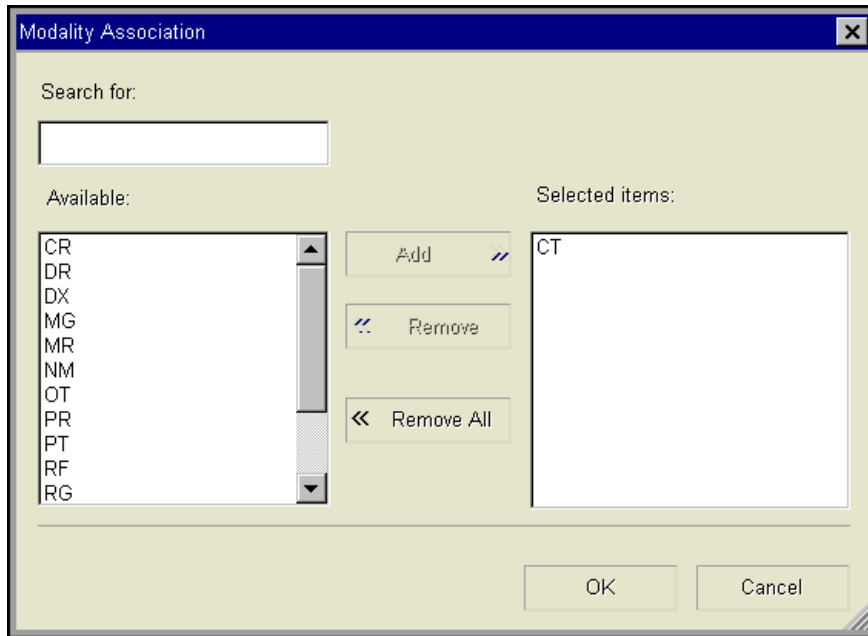
To specify the Modalities filter criterion:

- 1 Click the picker at the end of the **Modalities** box.



The **Modality Association** picker dialog box is displayed.

Figure 8-4 Modality Association picker dialog box



- 2 Do one of the following:

If...	Then...
Specifying one or more modalities	<ol style="list-style-type: none"> <li>1 In the <b>Available</b> list, click the modalities. You can also find a modality, by typing it in the <b>Search For</b> box. The matching modality is automatically selected in the list.</li> <li>2 Click <b>Add</b>. The selected modalities are moved to the <b>Selected items</b> list. To remove a modality from the <b>Selected items</b> list, select it and click <b>Remove</b>.</li> </ol>
Not specifying any modalities	Click <b>Remove All</b> . All modalities are moved to the <b>Available</b> list.

- 3 Click **OK**, to close the **Modality Association** picker dialog box.

## Specifying the Body Regions filter criterion

**Note:** Body regions are associated with a study through procedure types. To make use of the Body Regions filter criterion, body regions must be associated with the corresponding procedure types in the PACS Admin application. For details, contact your system administrator.

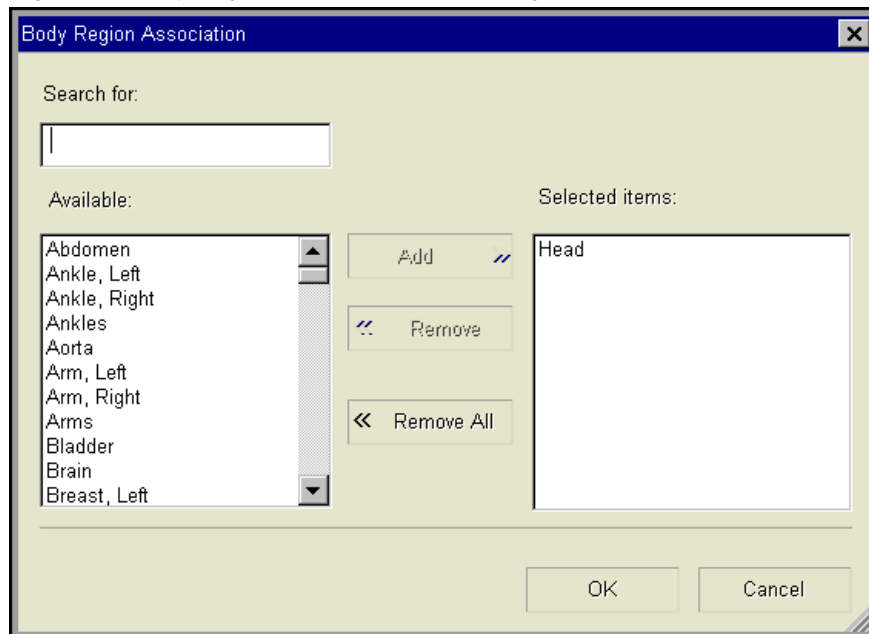
To specify the Body Regions filter criterion:

- 1 Click the picker at the end of the **Body Regions** box.



The **Body Region Association** picker dialog box is displayed.

Figure 8-5 Body Region Association picker dialog box



2 Do one of the following:

If...	Then...
Specifying one or more body regions	<p>1 In the <b>Available</b> list, click the body region entries. You can also find a body region entry, by typing it in the <b>Search For</b> box. The matching entry is automatically selected in the list.</p> <hr/> <p><b>Note:</b> The list of body region entries is created in PACS Admin and can be modified. For details, refer to the Horizon Medical Imaging™ <i>Administrator's Guide</i>, or the Online Help within PACS Admin.</p> <hr/> <p>2 Click <b>Add</b>. The selected body region entries are moved to the <b>Selected items</b> list. To remove a body region entry from the <b>Selected items</b> list, select it and click <b>Remove</b>.</p>
Not specifying any body regions	Click <b>Remove All</b> . All modalities are moved to the <b>Available</b> list.

3 Click **OK**, to close the **Body Region Association** picker dialog box.

### Specifying the Procedure Types filter criterion

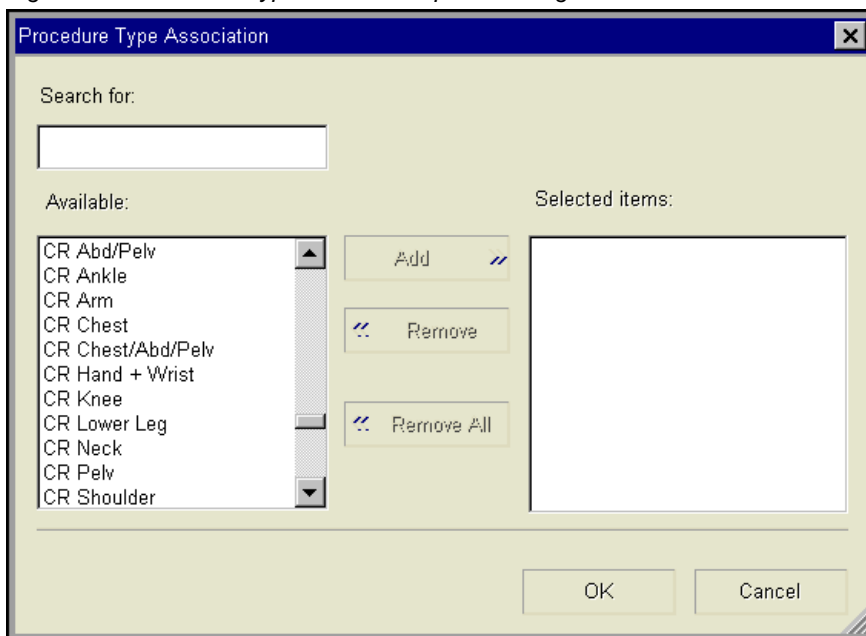
To specify the Procedure Types filter criterion:

1 Click the **picker** at the end of the **Procedure Types** box.



The **Procedure Type Association** picker dialog box is displayed.

Figure 8-6 Procedure Type Association picker dialog box



2 Do one of the following:

If...	Then...
Specifying one or more procedure types	<p>1 In the <b>Available</b> list, click the procedure types. You can also find a procedure type, by typing it in the <b>Search For</b> box. The matching procedure type is automatically selected in the list.</p> <hr/> <p><b>Note:</b> The list of procedure types is created in PACS Admin and can be modified. For details, refer to the Horizon Medical Imaging™ <i>Administrator's Guide</i>, or the Online Help within PACS Admin.</p> <hr/> <p>2 Click <b>Add</b>. The selected procedure types are moved to the <b>Selected items</b> list. To remove a procedure type from the <b>Selected items</b> list, select it and click <b>Remove</b>.</p>
Not specifying any procedure types	Click <b>Remove All</b> . All procedure types are moved to the <b>Available</b> list.

3 Click **OK**, to close the **Procedure Type Association** picker dialog box.

## Step 3: Specifying the Reference Studies properties

After specifying the General properties of the new display protocol, specify its Reference Studies properties. The Reference Studies properties, also known as the Reference Relevancy Rules, specify which studies should be automatically opened as reference studies when the anchor study is opened. For details, see “Attributes of a display protocol” on page 212.

**Note:** Depending on the site configuration, grouped studies may be considered as relevant studies. In this case, they may also be automatically opened. For details, contact McKesson Medical Imaging Group.

### Steps for this task

To specify the Reference Studies properties of the new display protocol:

- 1 In the **Save Display As** dialog box (Figure 8-2 on page 223), click the **Reference Studies** tab.

The **Reference Studies** page is displayed.

Figure 8-7 Save Display Protocol As dialog box - Reference Studies page

The screenshot shows the 'Save Display Protocol As' dialog box with the 'Reference Studies' tab selected. The dialog has a title bar with 'Save Display Protocol As' and a close button. Below the title bar are two tabs: 'General' and 'Reference Studies'. The 'Reference Studies' tab is active and contains the following settings:

- Open reference studies automatically
- Maximum number of reference studies to open : 2 (dropdown)
- Include reference studies of these types :
  - Modalities : ---Any---
  - Body regions : HEAD
  - Procedure types : ---Any---
- Ignore unreported studies
- Do not open studies performed after the current study
- Do not open studies that are 6 Month(s) older than the anchor
- Do not open studies performed before:
  - Month : September
  - Day : 30
  - Year : 2004

At the bottom of the dialog are 'OK' and 'Cancel' buttons.


- Specify whether to open relevant studies automatically when the display protocol is applied, and how many studies to open:


If...	Then...
Opening relevant studies automatically	<ol style="list-style-type: none"> <li>Select the check box <b>Open reference studies automatically</b>.</li> <li>Click the arrow at the end of the <b>Maximum Reference Studies to Open</b> box, and then specify the maximum number of relevant studies that can be opened. Alternatively, enter the number directly in the box.  Up to nine most recent relevant studies can be opened.</li> </ol> <hr/> <p><b>Note:</b> Whether relevant studies are opened also depends on your display protocol preference. See <a href="#">“Display Protocol preference”</a> on page 293.</p>
Not opening relevant studies automatically	Clear the check box <b>Open reference studies automatically</b> .


- Specify the filter criteria. The filter criteria identify studies relevant for interpreting the **anchor study**. See [“Specifying the filter criteria”](#) on page 225.

Figure 8-8 Filter criteria for relevant studies

— Include reference studies of these types : —

Modalities :  

Body regions :  

Procedure types :  

---

**Note:** The filter criteria also determine which studies are listed as relevant studies when you click the **Study Information bar**. For details, see [“Manually opening additional studies for the same patient”](#) on page 50..

---



- 4 If in step 2, you have configured Horizon Rad Station to open relevant studies automatically, specify the following options. To specify the options, select or clear the boxes:

Check box	Meaning (If selected)
Ignore Unreported studies	Do not open studies with the status of <b>In-Progress</b> , <b>Performed</b> , <b>Reviewed</b> , and <b>Needs Over-Read</b> .
Do not open studies performed after the current study	Do not open studies that were performed after the <b>anchor study</b> .
Do not open studies that are older than the anchor	Do not open studies that were performed before the anchor study by a specified time period.  For example, to specify a time period of 6 months: <ul style="list-style-type: none"> <li>• Enter <b>6</b> in the left box</li> <li>• Click the right box, and then select <b>Months</b>.</li> </ul>
Do not open studies before	Do not open studies that were performed before a specified date. The date is specified as follows: <ul style="list-style-type: none"> <li>• Click the <b>Month</b> box, and then select the month.</li> <li>• Click the <b>Day</b> box, and then select the day.</li> <li>• Click the <b>Year</b> box, and then select the year.</li> </ul> <hr/> <p><b>Note:</b> If the date is in conflict with the time period specified for the check box <b>Do not open studies that are older than the anchor</b>, the date takes precedence.</p> <hr/>

- 5 Click **OK**, to save the display protocol.

**Note:** If the **Name Already Being Used** message is displayed, see [“Troubleshooting display protocols”](#) on page 380.

## Modifying the current display protocol

This section describes how to modify the currently applied display protocol.

### In this section

This section contains the following topics:

Topic	See Page
<a href="#">Modifying the layout and presentation settings</a>	233
<a href="#">Modifying the properties of the current display protocol</a>	235
<a href="#">Modifying the ranking of the current display protocol</a>	239

## Modifying the layout and presentation settings

This section describes how to modify the layout and presentation settings of the currently applied [display protocol](#). For details, see [“Attributes of a display protocol”](#) on page 212.

**Note:** You can also save the layout and presentation settings when you close the study. See [“Saving a display protocol when closing a study”](#) on page 282.

### Restrictions for modifying the layout and presentation settings

The following restrictions exist:

- You cannot modify the layout and presentation settings of a system display protocol or the Generic display protocol.
- You cannot modify the layout and presentation settings of a system or site, or the Generic display protocol.

### Steps for this task

To modify the layout and presentation settings of the currently applied display protocol:

- 1 Navigate to the [stage](#) whose layout and presentation settings you want to modify. See [“Navigating the display protocol stages”](#) on page 259.

**Note:** You can add, modify, and delete a display protocol stage, or rearrange the stage order. See [“Working with display protocol stages”](#) on page 257.

- 2 Modify the layout of your interest:
  - Number of viewports on each screen (See [“Setting the screen layout”](#) on page 62)
  - Layout of images in each viewport (See [“Setting the viewport layout”](#) on page 63)
  - [Series](#) placement in each viewport (See [“Displaying series”](#) on page 44)

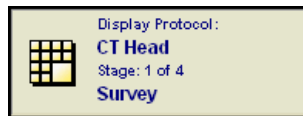
- 3 Modify the presentation settings of your interest:
  - [Window/Level](#) values and applied LUT function “[Changing the image contrast and brightness](#)” on page 105)
  - Zoom/Pan settings (See “[Zooming and panning images](#)” on page 83)
  - Image orientation (See “[Reorienting images](#)” on page 91)
  - Series display mode (See “[Selecting the series display mode](#)” on page 49)
  - Linking status (See “[Linking and unlinking series](#)” on page 64)

**Note:** You can also use the **Display Protocol Editor** to specify the following properties:

- Series placement
- Window/Level, Zoom/Pan settings, and image orientation

See “[About the Display Protocol Editor](#)” on page 243.

- 4 Repeat steps 1-3 for each stage whose layout and presentation settings you want to modify.
- 5 Click the **Display Protocol** button at the top of the [work area](#).

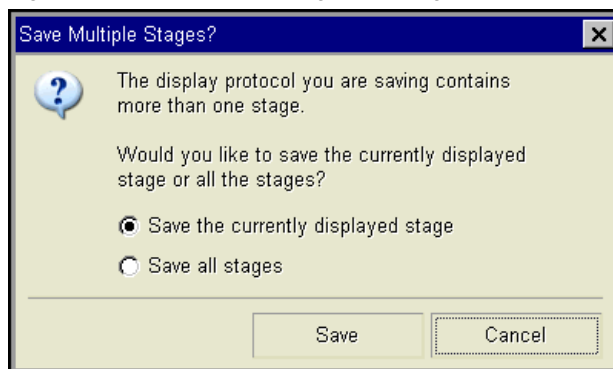


- 6 From the menu that is displayed, select **Save Changes**

**Note:** If the **Save Display Protocol As** dialog box ([Figure 8-2](#) on page 223) is displayed, the Generic display protocol is currently applied and you cannot modify its layout and presentation settings. However, you can create a new display protocol. Follow the procedures of “[Step 2: Specifying the General properties](#)” on page 222 and “[Step 3: Specifying the Reference Studies properties](#)” on page 230.

- 7 If the display protocol contains multiple stages, the **Save Multiple Stages** message is displayed.

*Figure 8-9 Save Multiple Stages message*



Specify the display protocol stages whose modified layout and presentation settings you want to save:

If...	Then...
Saving the layout and presentation settings of the current protocol stage	<ol style="list-style-type: none"> <li>1 Click <b>Save the currently displayed stage</b>.</li> <li>2 Click <b>Save</b>.</li> </ol>
Saving the layout and presentation settings of all the stages	<ol style="list-style-type: none"> <li>1 Click <b>Save all stages</b>.</li> <li>2 Click <b>Save</b>.</li> </ol>

## Modifying the properties of the current display protocol

You can modify the General properties and/or Reference Studies properties of the currently applied [display protocol](#). For details, see [“Attributes of a display protocol”](#) on page 212.

**Note:** You can also use the **Display Protocol Explorer**, to modify the properties of display protocols that are not currently applied. See [“Modifying the display protocol properties”](#) on page 280.

### Restriction for modifying the properties of the current display protocol

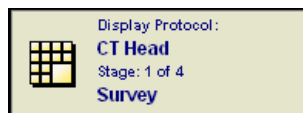
The following restriction exists:

- You cannot modify the properties of a system or site display protocol, or the Generic display protocol. However, you can create a display protocol based on them. See [“Creating a display protocol”](#) on page 221.

### Modifying the General properties

To modify the General properties of the currently applied display protocol:

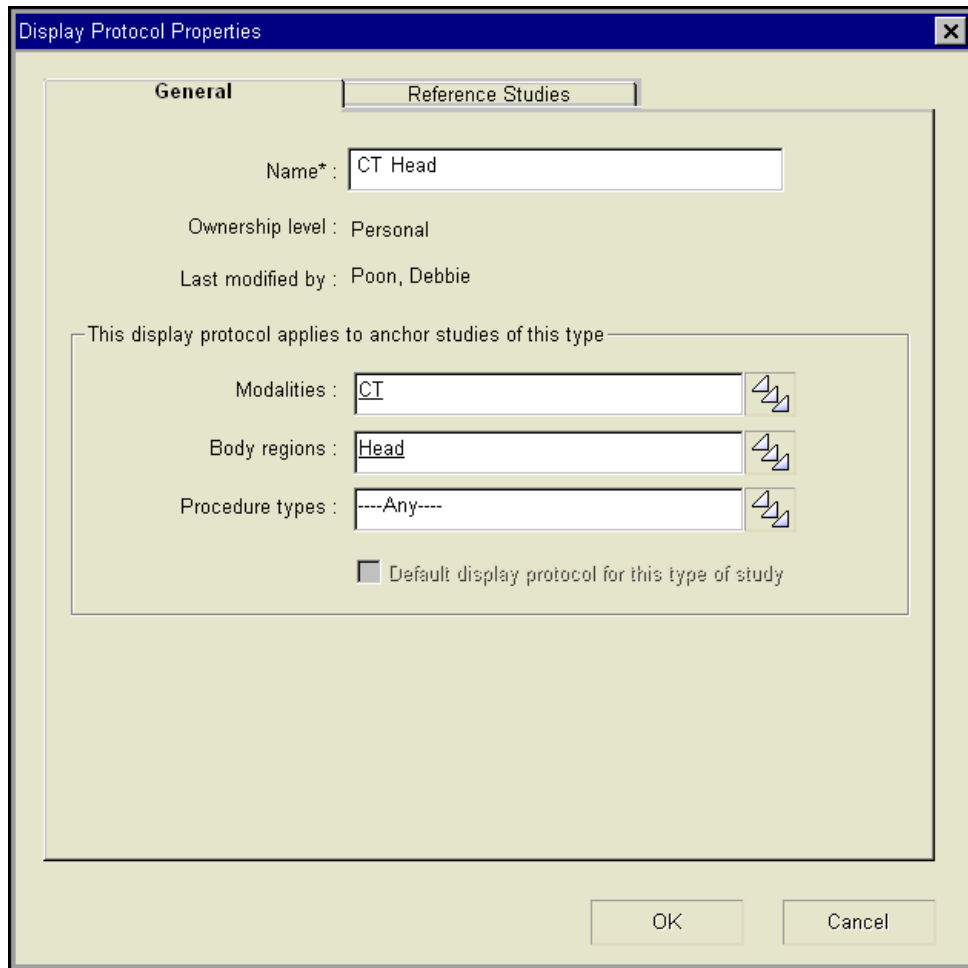
- 1 Click the **Display Protocol** button at the top of the [work area](#).



- 2 Point to **Edit Properties**, and select **Anchor and Reference Studies**.

The **General** page of the **Display Protocol Properties** dialog box is displayed.

Figure 8-10 Display Protocol Properties dialog box - General page



3 Modify any of the following properties:

If...	Then...
Modifying the name	In the <b>Name</b> box, enter the new name of the display protocol. You can enter up to 255 characters.  <b>Note:</b> The name must not be the same as any existing display protocols at the same ownership level.

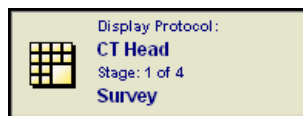
If...	Then... (Continued)
Modifying the Anchor Applicability Rules	Modify one of more of the following filter criteria: <ul style="list-style-type: none"> <li>• Modalities</li> <li>• Body regions</li> <li>• Procedure types</li> </ul> For details, see “Specifying the filter criteria” on page 225.
Setting the display protocol as the default	Select the check box <b>Default display protocol for this type of study.</b>  This check box is disabled if the display protocol is already set as the default one.

- 4 Click **OK**, to save the changes.

### Modifying the Reference Studies properties

To modify the Reference Studies properties of the currently applied display protocol:

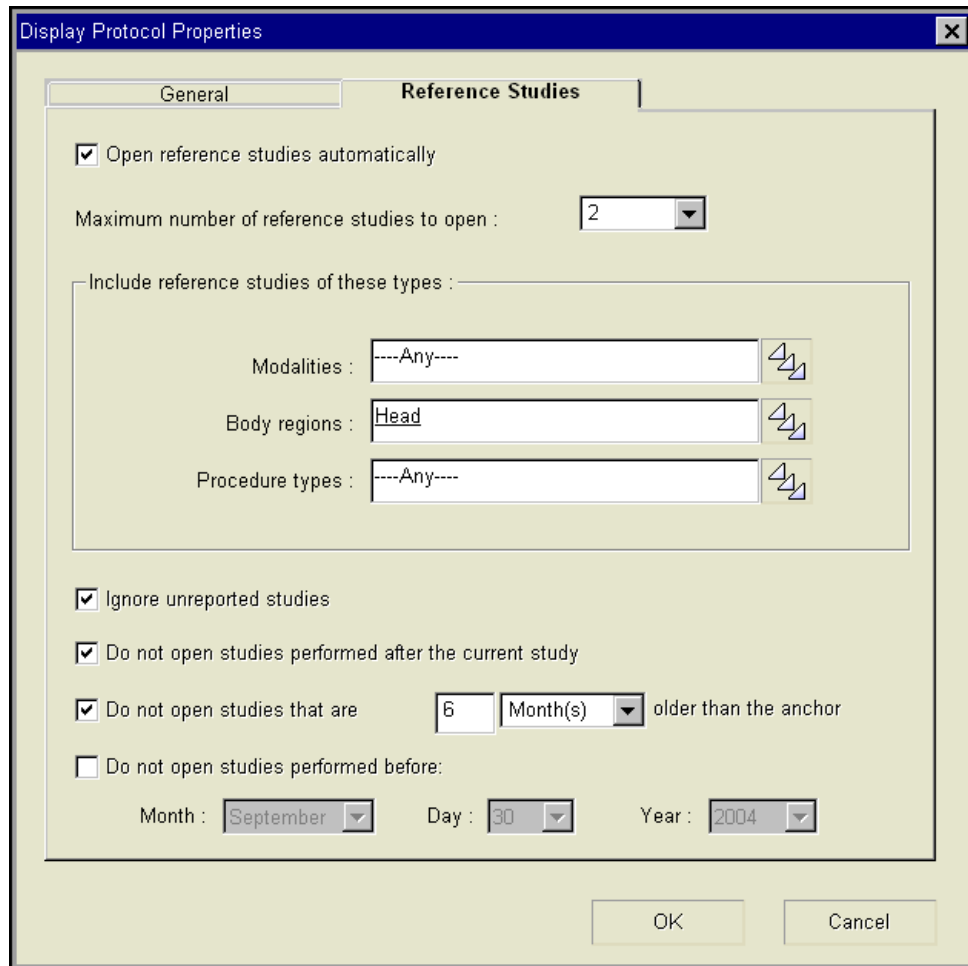
- 1 Click the **Display Protocol** button at the top of the **work area**.



- 2 Point to **Edit Properties**, and then select **Anchor and Reference Studies**.
- 3 Click the **Reference Studies** tab.

The **Reference Studies** page of the **Display Protocol Properties** dialog box is displayed.

Figure 8-11 Display Protocol Properties dialog box - Reference Studies page



4 Modify any of the following properties:

If...	Then...
Modifying whether to open the relevant studies automatically	Follow step 2 of “ <a href="#">Step 3: Specifying the Reference Studies properties</a> ” on page 230.
Modifying the filter criteria that identify relevant studies	Modify one of more of the following filter criteria: <ul style="list-style-type: none"> <li>• <a href="#">Modalities</a></li> <li>• <a href="#">Body regions</a></li> <li>• <a href="#">Procedure types</a></li> </ul> For details, see “ <a href="#">Specifying the filter criteria</a> ” on page 225.

- 5 If in step 4, you have configured Horizon Rad Station to open relevant studies automatically, you can modify the following options:
  - Whether to open studies with the status of **In-Progress**, **Performed**, **Reviewed**, and **Needs Over-Read**
  - Whether to open studies that were performed after the **anchor study**
  - Whether to open studies that were performed before the anchor study by a specified time period
  - Whether to open studies that were performed before a specified date

For details, see step 4 of “[Step 3: Specifying the Reference Studies properties](#)” on page 230.

- 6 Click **OK**, to save the changes.

## Modifying the ranking of the current display protocol

You can modify the ranking of the current **display protocol** in one of the following ways:

- A display protocol that is automatically applied when you open the study, is the default display protocol. You can move it down one entry in the list. As a result, the display protocol with the second highest ranking becomes the default.
- If the display protocol is manually applied, you can set it as the default. As a result, the original default display protocol has the second highest ranking.

---

**Note:** You can also modify the ranking of existing display protocols. See “[Arranging the ranking of display protocols](#)” on page 275.

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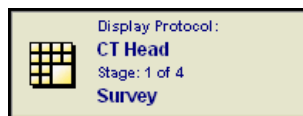
### Restriction for this task

You can only modify the ranking of the current display protocol if it is relevant to the study. Relevancy of a display protocol is determined by the Anchor Applicability Rules. For details, see “[What is a relevant display protocol](#)” on page 216.

### Steps for this task

To modify the ranking of the current display protocol:

- 1 Click the **Display Protocol** button at the top of the **work area**.





2 Do one of the following:

<b>If...</b>	<b>Then...</b>
Moving the current display protocol down one entry	From the menu that is displayed, select <b>Make Alternate for this Study Type.</b>
Setting the current display protocol as the default	From the menu that is displayed, select <b>Make default for this Study Type.</b>

## Deleting the current display protocol

The currently applied **display protocol** can be deleted. Depending on the ownership of the display protocol and your user role, you may:

- Delete your personal display protocol
- Delete a site display protocol for your use only
- Delete a display protocol for the entire site

For details on the ownership levels, see “**User, site, and system display protocols**” on page 214.

**Note:** You can also use the **Display Protocol Explorer**, to delete display protocols that are not currently applied. See “**Deleting a display protocol**” on page 281.

### Restrictions for deleting the current display protocol

The following restrictions exist:

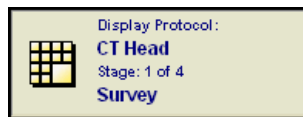
- You cannot delete a system display protocol or the Generic display protocol.
- The current display protocol cannot be deleted if it belongs to another Horizon Rad Station user. To apply a display protocol belonging to another user, see “**Applying display protocols to studies**” on page 275.

You cannot delete a system or site, or the Generic display protocol.

### Steps for this task

To delete the current display protocol:

- 1 Click the **Display Protocol** button at the top of the **work area**.



- 2 Point to **Edit Properties**, and select **Delete**. The **Delete** option is dimmed if a **Bookmark** is currently applied. For details on Bookmarks, see “**Understanding Bookmarks**” on page 180.

A confirmation message is displayed.

- 3 Delete the display protocol as follows:

If...	Then...
The display protocol is available to you only	The <b>Delete</b> message is displayed. See <i>Figure 8-12</i> .  Click <b>Delete</b> , to permanently delete the display protocol.

If...	Then... (Continued)
The display protocol is available to all users at your site, and you do not have the authority to manage site display protocols	The <b>Remove</b> message is displayed. See <i>Figure 8-13</i> .  Click <b>Remove</b> , to delete the display protocol for your use.
The display protocol is available to all users at your site, and you have the authority to manage site display protocols	The <b>Delete Site Display Protocol</b> message is displayed. See <i>Figure 8-14</i> .  Do one of the following: <ul style="list-style-type: none"> <li>• To delete the display protocol for your use, click <b>Remove From List</b>.</li> <li>• To delete the display protocol for the site, click <b>Permanently Delete</b>.</li> </ul>

Figure 8-12 Delete display protocol confirmation message

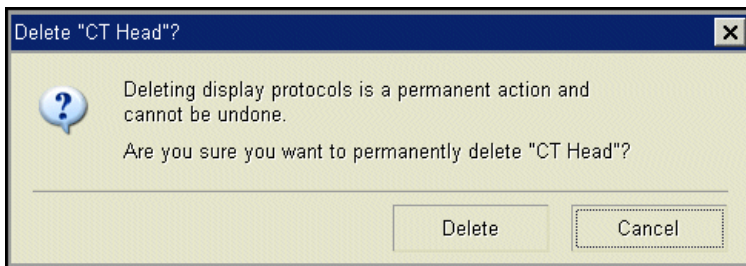


Figure 8-13 Remove display protocol confirmation message

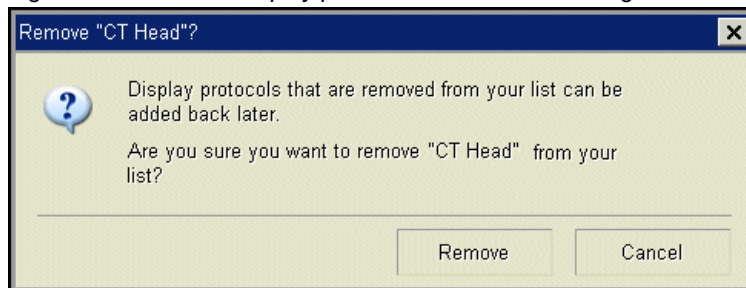
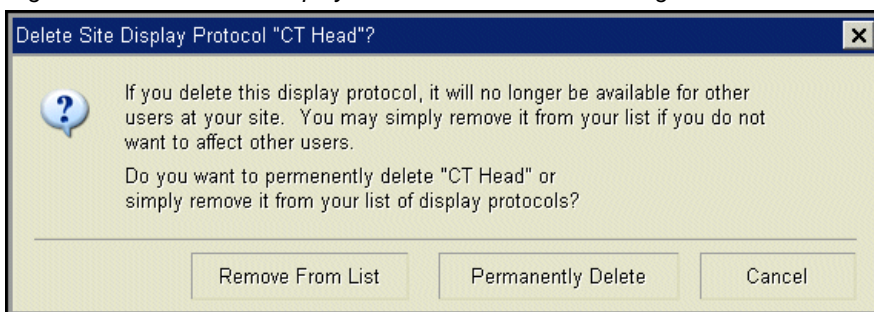


Figure 8-14 Delete Site Display Protocol confirmation message



## Using the Display Protocol Editor

This section describes how to use the Display Protocol Editor, to specify the content and presentation settings of viewports.

### In this section

This section contains the following topics:

Topic	See Page
About the Display Protocol Editor	243
Step 1: Specifying which study's series to display	244
Step 2: Specifying the series placement settings	246
Step 3: Specifying the presentation settings of the viewport	252
Reserving a monitor for displaying a reference study	255

## About the Display Protocol Editor

The **Display Protocol Editor** enables you to specify the content and presentation settings (*Window/Level*, *Zoom/Pan* settings, and image orientation) of individual *viewports*. For example, you can:

- Display *series* from different studies on the same monitor, for cross *modality* comparison
- Display a series with different presentation settings, in multiple viewports

For details, see the following topics:

- “[Step 1: Specifying which study's series to display](#)” on page 244
- “[Step 2: Specifying the series placement settings](#)” on page 246
- “[Step 3: Specifying the presentation settings of the viewport](#)” on page 252

In addition, you can display series within a *reference study* in all viewports on a monitor. See “[Reserving a monitor for displaying a reference study](#)” on page 255.

## When to use the Display Protocol Editor

You can use the **Display Protocol Editor** in the following situations:

- When creating a *display protocol*
- When modifying the currently applied display protocol

## Reasons for using the Display Protocol Editor

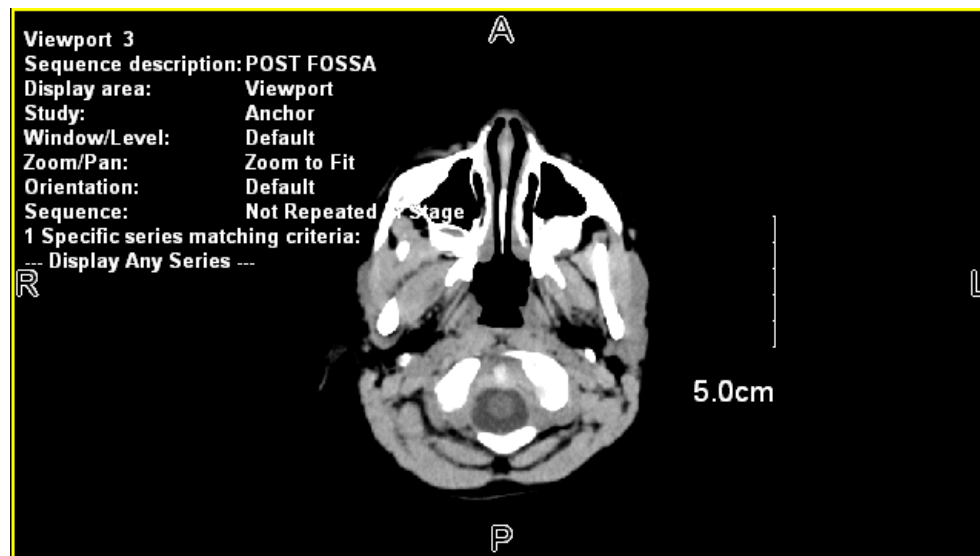
The content and presentation settings of viewports can be specified manually, or using the **Display Protocol Editor**. However, in some situations using the **Display Protocol Editor** is more useful. For example, if you want to display a series from an unopened study, you do not need to open the study first.

## Display Protocol Editor text overlay

Depending on the site configuration, when the **Display Protocol Editor** is displayed, its text overlay may be displayed on the images.

If the Display Protocol Editor text overlay is configured to be displayed, Horizon Rad Station hides **text overlay** that was originally displayed, except for the orientation marker. See *Figure 8-15* on page 244. For details, contact McKesson Medical Imaging Group.

Figure 8-15 Display Protocol Editor text overlay



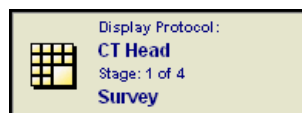
## Step 1: Specifying which study's series to display

You can display a **series** from the **anchor study** or **reference study**.

### Steps for this task

To specify the study whose series you want to display:

- 1 Click the viewport.
- 2 Click the **Display Protocol** button at the top of the **work area**.



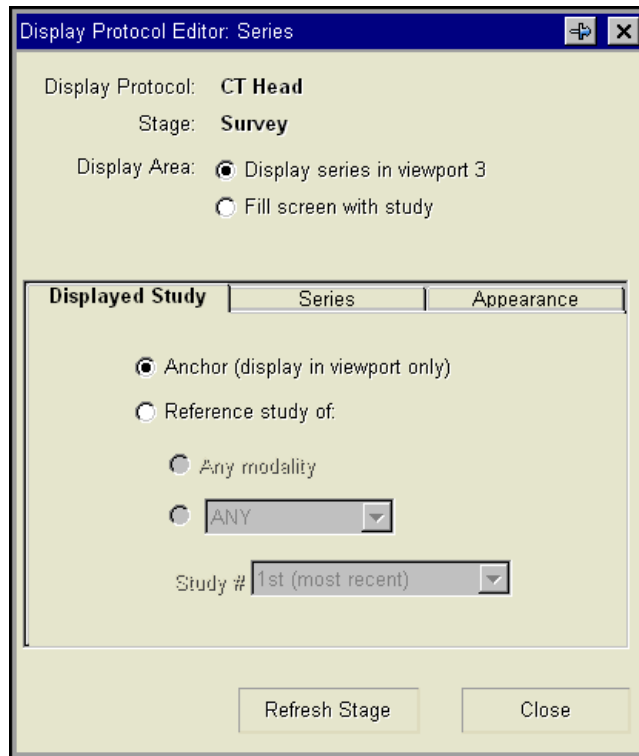
- 3 Point to **Edit Properties**, and select **Series Placement and Appearance**.

Alternatively, instead of steps 1-3, right-click the viewport and select **Display Protocol Editor**.

**Note:** Whether the **Display Protocol Editor** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.


The **Display Protocol Editor** is displayed.

Figure 8-16 Display Protocol Editor



- 4 Click **Display series in viewport**.
- 5 Click the **Displayed Study** tab.
- 6 Do one of the following:

If...	Then...
Displaying series from the anchor study in the <a href="#">viewport</a>	Click <b>Anchor (display in viewport only)</b> .

If...	Then... (Continued)
Displaying series from a reference study in the viewport	<ol style="list-style-type: none"> <li>1 Click <b>Reference Study of</b>.</li> <li>2 Specify the <b>modality</b> of the reference study whose series you want to display:             <ul style="list-style-type: none"> <li>• To display series from a reference study of any modality, click <b>Any</b>.</li> <li>• To display series from a reference study of a particular modality, click the second option. Then click the box, and select the modality.</li> </ul> </li> <li>3 Click the <b>Study #</b> box, and specify the reference study. Available options include <b>1st (most recent)</b>, <b>2nd (most recent)</b>, and so on.</li> </ol>  <p>The reference study that matches the selected options will have a series displayed in the viewport. For example, if you select <b>CT</b> and <b>1st (most recent)</b>, a series of the most recent <b>CT</b> reference study is displayed.</p>

## Step 2: Specifying the series placement settings

After **specifying the study whose series to display**, specify the series placement settings.

The series placement settings enable you to specify which **series** to display in the **viewport**. They consist of a list of matching criteria. See “**Available matching criteria for series placement**” on page 247.

After identifying the study whose series to display, Horizon Rad Station compares the first matching criterion in the list, with the series in the study. The first series that matches the criterion is displayed in the viewport. If no series in the study matches the first criterion, the next criterion in the list is used.

You can specify the series placement settings, in one of the following ways:

- Add or modify a matching criterion
- Delete a matching criterion
- Reorder the matching criteria

## Available matching criteria for series placement

The following table describes the two types of series matching criteria.

Criteria type	Meaning
Specific matching criteria	Criteria that contain specific properties. For example, you can create a criterion that displays the series only if it contains scout images.
General matching criteria	<p>Predefined criteria available in Horizon Rad Station. They include:</p> <ul style="list-style-type: none"> <li>• Display any series in study</li> <li>• Keep viewport blank</li> <li>• Display All flagged images</li> <li>• Display All Images</li> </ul> <hr/> <p><b>Note:</b> There must be one and only one general matching criterion in the list. You cannot add a second general matching criterion, or delete an existing one. In addition, the general matching criterion must be the last one in the list.</p>

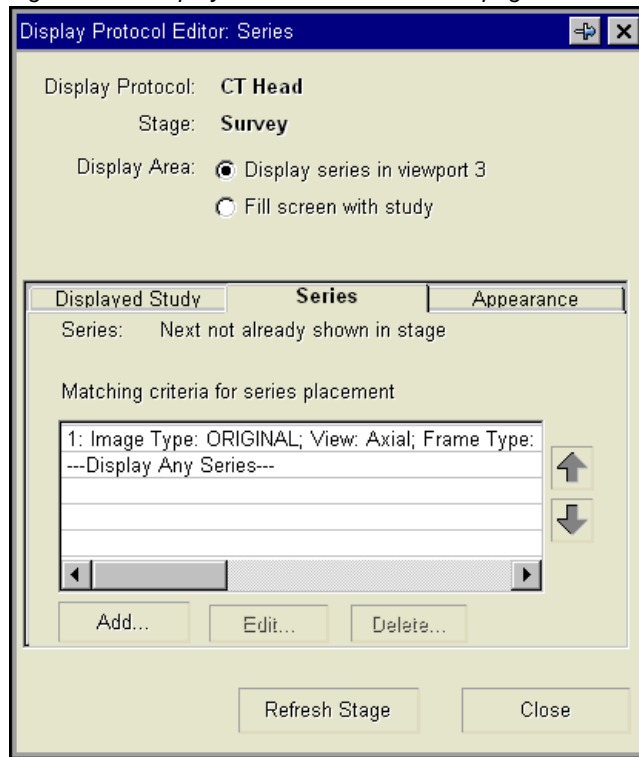
### Steps for this task

To specify the series placement settings:

- 1 In the **Display Protocol Editor** (*Figure 8-16* on page 245), click the **Series** tab.  
The **Series** page is displayed, listing the current series placement settings.



Figure 8-17 Display Protocol Editor - Series page



- 2 If **Same as in viewport(s)** is displayed at the top of the page, the series placement settings of this viewport are the same as in the associated viewports. As a result, the same series is displayed in the associated viewports. You can break the association, by clicking **Break**.



- 3 Modify the current series placement:

If...	Then...
Adding a specific matching criterion	<ol style="list-style-type: none"> <li>1 Click <b>Add</b>. The <b>Add Series Matching Criteria</b> dialog box is displayed. See <a href="#">Figure 8-18</a> on page 250.</li> <li>2 Specify the properties of the criterion. See <a href="#">“Setting the properties of a specific matching criterion”</a> on page 250.</li> </ol> <p><b>Note:</b> If this is the first added specific matching criterion, the general match criterion is automatically set to <b>Keep the viewport blank</b>.</p>



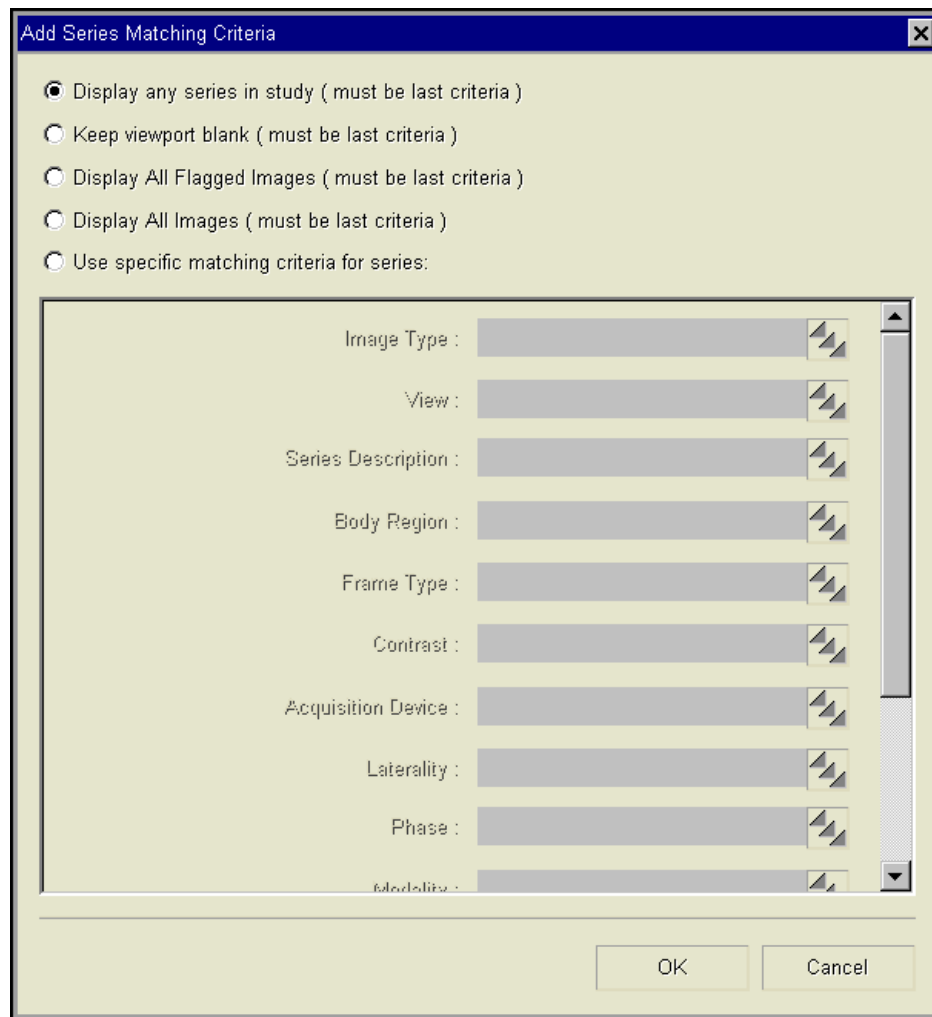
If...	Then... (Continued)
Modifying a matching criterion	<ol style="list-style-type: none"> <li>1 Click the criterion you want to modify.</li> <li>2 Click <b>Edit</b>. The <b>Edit Series Matching Criteria</b> dialog box is displayed.</li> <li>3 Do one of the following: <ul style="list-style-type: none"> <li>• Select a different general matching criterion. For details, see <a href="#">“Available matching criteria for series placement”</a> on page 247.</li> <li>• Modify the properties of a specific matching criterion. See <a href="#">“Setting the properties of a specific matching criterion”</a> on page 250.</li> </ul> </li> </ol>
Deleting a specific matching criterion	<ol style="list-style-type: none"> <li>1 Click the criterion you want to delete.</li> <li>2 Click <b>Delete</b>.</li> </ol>
Reordering a specific matching criterion	<ol style="list-style-type: none"> <li>1 Click the criterion you want to reorder.</li> <li>2 Move the criterion up or down in the list: <ul style="list-style-type: none"> <li>• To move the criterion one entry up in the list, click the <b>Up</b> icon. </li> <li>• To move the criterion one entry down in the list, click the <b>Down</b> icon. </li> </ul> </li> </ol>

Figure 8-18 Add Series Matching Criteria dialog box



- 4 Click **Refresh Stage**.

## Setting the properties of a specific matching criterion

You can set one or more properties for a specific matching criterion. The specific matching criterion is part of the series placement settings that enable you to specify which series to display in a particular viewport. For details, see [“Step 2: Specifying the series placement settings”](#) on page 246.

### Examples of properties

Properties that can be specified depend on the site configuration. Some examples include:

- Image type
- View
- **Series** Description

- Body Region
- Frame Type
- Contrast
- Acquisition Device
- Laterality
- Phase
- Modality
- Projection
- Echo Type

For details, contact McKesson Medical Imaging group.

### Steps for this task

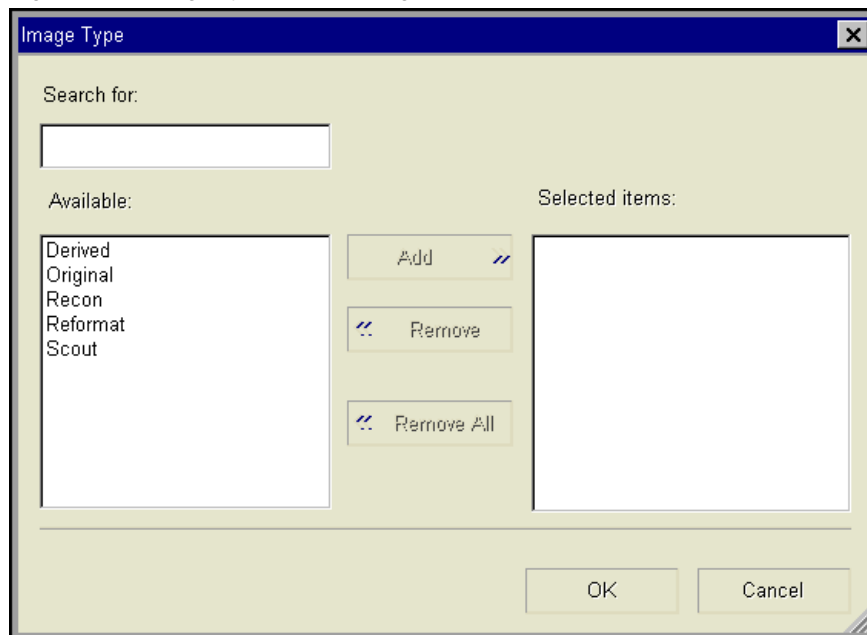
To set the properties of a specific matching criterion:

- 1 In the **Add Series Matching Criteria** dialog box (*Figure 8-18* on page 250) or **Edit Series Matching Criteria** dialog box, click **Use specific matching criteria for series**.
- 2 Specify the properties. For example, to specify the image type, do the following:
  - Click the **picker** at the end of the **Image Type** box.



The **Image Type** picker dialog box is displayed.

*Figure 8-19 Image Type picker dialog box*



- In the **Available** list, click the image types. You can also find an image type, by typing it in the **Search For** box. The matching image type is automatically selected in the list.
- Click **Add**. The selected image types are moved to the **Selected items** list. To remove an image type from the **Selected items** list, select it and click **Remove**.
- Click **Close**, to close the **Image Type** picker dialog box.

The image types are listed in the **Image Type** box.

- 3 Click **OK**.

## Step 3: Specifying the presentation settings of the viewport

After [specifying the series placement settings of the viewport](#), specify the following presentation settings:

- [Window/Level](#)
- Zoom/Pan settings
- Image orientation

---

**Note:** To display images with the specified presentation settings, you need to save the settings in the display protocol. For details, see [“Step 2: Specifying the General properties”](#) on page 222.

---

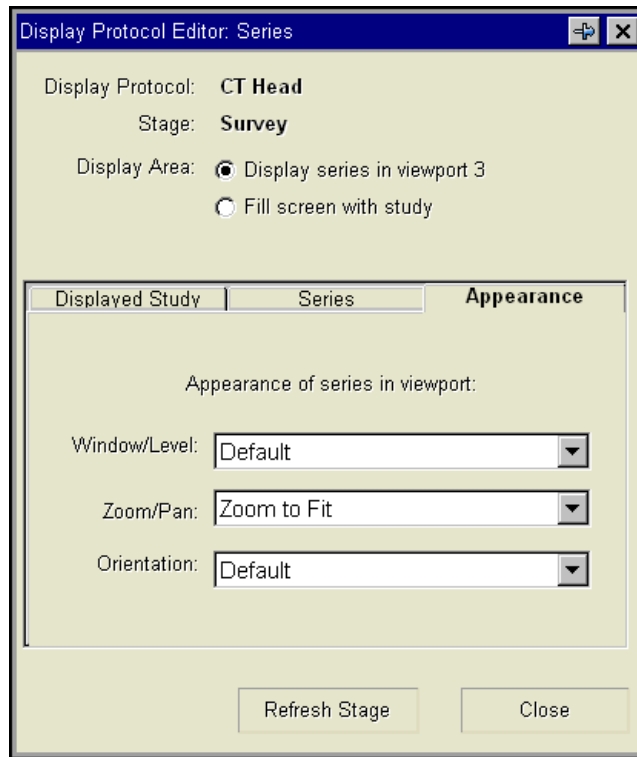
### Steps for this task

To specify the presentation settings of the viewport:

- 1 In the **Display Protocol Editor** ([Figure 8-16](#) on page 245), click the **Appearance** tab.

The **Appearance** page is displayed, listing the current presentation settings of the viewport.

Figure 8-20 Display Protocol Editor - Appearance page



## 2 Modify the presentation settings:

If...	Then...
Modifying the Window/Level	<p>Click the <b>Window/Level</b> box, and then select the option:</p> <ul style="list-style-type: none"> <li>• To display the images with the Window/Level in the most recently saved <b>Stored Image Presentation (SIP)</b>, select <b>Default</b>. If the study does not have an SIP, the images are displayed with the Default Window/Level.</li> <li>• To display the images with the current Window/Level, select <b>As Shown</b>.</li> <li>• To apply a <b>Window/Level preset</b> to the images, select the one of your interest.</li> </ul> <p><b>Note:</b> Only the Window/Level presets associated with the modalities specified in the <b>display protocol</b> are listed.</p>

If...	Then... (Continued)
<p>Modifying the Zoom/Pan settings</p>	<p>Click the <b>Zoom/Pan</b> box, and then select the option:</p> <ul style="list-style-type: none"> <li>• To display the images with the pan/zoom settings in the most recently saved SIP, select <b>Default</b>. If the study has does not have an SIP, the images are zoomed to fit the viewport.</li> <li>• To display the images with the current Zoom/Pan settings, select <b>As Shown</b>.</li> <li>• To zoom the images to fit the viewport, select <b>Zoom to Fit</b>.</li> <li>• To display the images at 100% of the current size, select <b>100%</b>.</li> <li>• To display the images at their life size, select <b>Life Size</b>.</li> </ul> <hr/> <p><b>Note:</b> If the monitor is not calibrated for life size image display, selecting <b>Life Size</b> zooms the images to fit the viewport.</p>
<p>Modifying the image orientation</p>	<p>Click the <b>Orientation</b> box, and then select the option:</p> <ul style="list-style-type: none"> <li>• To display the images with the image orientation in the most recently saved SIP, select <b>Default</b>. If the study does not have an SIP, the images are displayed with the default orientation.</li> <li>• To display the images with the standard orientation, select <b>Standard (R-L)</b>.</li> <li>• To display the images with the current orientation, select <b>As Shown</b>.</li> </ul>

3 Click **Close**.

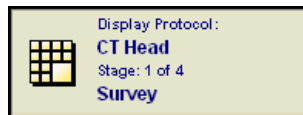
## Reserving a monitor for displaying a reference study

**Series** within a **reference study** can be displayed in all **viewports** on a monitor. Horizon Rad Station applies the layout and presentation settings according to the **display protocol** that is relevant to the reference study and has the highest ranking.

### Steps for this task

To reserve a monitor on which to display a reference study:

- 1 Click a viewport on the monitor that you want to reserve for a reference study.
- 2 Click the **Display Protocol** button at the top of the **work area**.



- 3 Point to **Edit Properties**, and select **Series Placement and Appearance**.

Alternatively, instead of steps 1-3, right-click the viewport and select **Display Protocol Editor**.

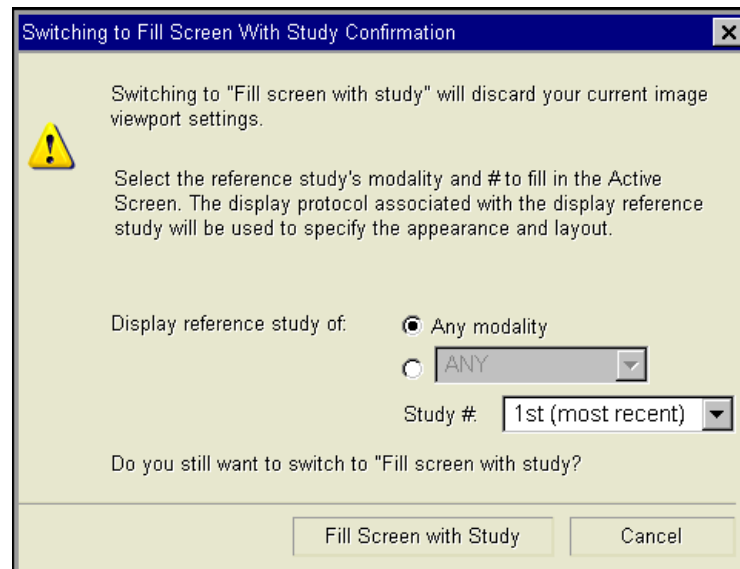
**Note:** Whether the **Display Protocol Editor** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

The **Display Protocol Editor** is displayed. See *Figure 8-16* on page 245. For details, see “[About the Display Protocol Editor](#)” on page 243.

- 4 Click **Fill screen with study**.

The **Switching to Fill Screen With Study Confirmation** message is displayed.

*Figure 8-21 Switching to Fill Screen With Study Confirmation message*





## 5 Specify the reference study whose series you want to display:

If...	Then...
Displaying series from a reference study of any <b>modality</b>	Click <b>Any modality</b> . Series in the most recent reference study are displayed in the viewports.
Displaying series from a reference study of a particular modality	<ol style="list-style-type: none"> <li>1 Click the second option.</li> <li>2 Click the box, and select the modality.</li> <li>3 Click the <b>Study #</b> box, and specify the reference study. Available options include <b>1st (most recent)</b>, <b>2nd (most recent)</b>, and so on.</li> </ol> <p>Series in the reference study that matches the selected options are displayed in the viewports. For example, if you select <b>CT</b> and <b>1st (most recent)</b>, series in the most recent <b>CT</b> reference study are displayed.</p>

6 Click **Fill Screen with Study**.

## Working with display protocol stages

This section describes how to work with display protocol stages.

### In this section

This section contains the following topics:

Topic	See Page
Understanding display protocol stages	257
Navigating the display protocol stages	259
Adding a display protocol stage	261
Reordering display protocol stages	262
Modifying a display protocol stage	263
Deleting a display protocol stage	264

## Understanding display protocol stages

Display protocol stages can be interpreted as [display protocols](#) within display protocols. They define the image display area, by specifying which images are displayed and how they are displayed. See [“Attributes of a display protocol stage”](#) on page 257.

Multiple stages may exist within a single display protocol, allowing you to view images in different contexts. See [“Types of display protocol stages”](#) on page 258.

### Attributes of a display protocol stage

The attributes of a display protocol stage are specified when the display protocol that contains the stage is created. For details, see [“Creating a display protocol”](#) on page 221.

The following table describes the attributes of a display protocol stage.

Attributes	Example
Number of <a href="#">viewports</a> on each screen	Display four viewports on each screen, using the Four Up (2x2) layout
Image layout in each viewport	Display one image at a time in each viewport, using the One Up (1x1) layout

Attributes	Example (Continued)
Series placement in each viewport	Display the series as follows: <ul style="list-style-type: none"> <li>• T1 series of the <b>anchor study</b>, in the top left viewport</li> <li>• T2 series of the anchor study, in the top right viewport</li> <li>• T1 series of the <b>reference study</b>, in the bottom left viewport</li> <li>• T2 series of the reference study, in the bottom right viewport</li> </ul>
Presentation settings for images displayed in each viewport	Display the images in all viewports as follows: <ul style="list-style-type: none"> <li>• Zoom the images to fit the viewport</li> <li>• Display the images with their initial <b>Window/Level</b></li> <li>• Display the images in their initial orientation</li> <li>• Display the series in Standard mode</li> <li>• Link the viewport</li> </ul>

### Types of display protocol stages

The following table describes the four types of display protocol stages. Each display protocol stage type represents the context in which the stage is used.

Stage type	Meaning
Survey	Used for quickly viewing all the images in the <b>anchor study</b> .
Comparison	Used for viewing images in multiple studies.  Typically, this stage is for comparing images in the anchor study and its <b>reference studies</b> . It can be used for same <b>modality</b> comparison, or cross modality comparison.
Review	Used for reviewing flagged images in the anchor study, particularly as an aid for dictating <b>reports</b> .
Other	Used for any other purpose not covered by the other types.

The display protocol stage type is specified when the stage is added. See “[Adding a display protocol stage](#)” on page 261.


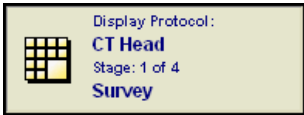
## Navigating the display protocol stages


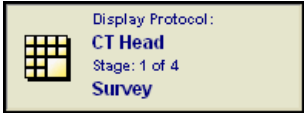
You can navigate the **stages** of the currently applied **display protocol**, by:

- Moving through the stages
- Jumping to a particular stage

### Moving through the display protocol stages

To move through the stages:

If...	Then...
Displaying the stage immediately preceding the currently displayed stage	<p>Click the <b>Stage &lt;</b> icon on the main toolbar.</p>  <p>Alternatively, do the following:</p> <ul style="list-style-type: none"> <li>• Click the <b>Display Protocol</b> button at the top of the <b>work area</b>. The button displays information about the applied display protocol and the current stage.</li> </ul>  <ul style="list-style-type: none"> <li>• From the menu that is displayed, select <b>Previous Stage</b>.</li> </ul>

If...	Then... (Continued)
<p>Displaying the stage immediately after the currently displayed stage</p>	<p>Click the <b>Stage &gt;</b> icon on the main toolbar.</p>  <p>Alternatively, do the following:</p> <ul style="list-style-type: none"> <li>Click the <b>Display Protocol</b> button at the top of the <b>work area</b>. The button displays information about the applied display protocol and the current stage.</li> </ul>  <ul style="list-style-type: none"> <li>From the menu that is displayed, select <b>Next Stage</b>.</li> </ul>

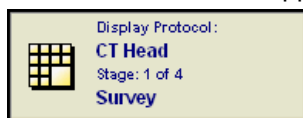
**Note:** You can also use your own **shortcuts** to move through the stages. To set up shortcuts, see **“Adding and modifying user shortcuts”** on page 304.

The corresponding stage is displayed.

### Jumping to a particular display protocol stage

To jump to particular stage:

- 1 Click the **Display Protocol** button at the top of the **work area**. The button displays information about the applied display protocol and the current stage.



- 2 Point to **Stages**, and then select the stage that you want to display.

The corresponding stage is displayed.

## Adding a display protocol stage

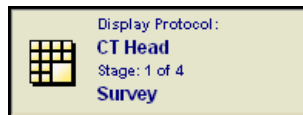
You can add **display protocol stages** in the following situations:

- When you create a new display protocol
- When you modify the layout and presentation settings of the current display protocol

### Steps for this task

To add a display protocol stage:

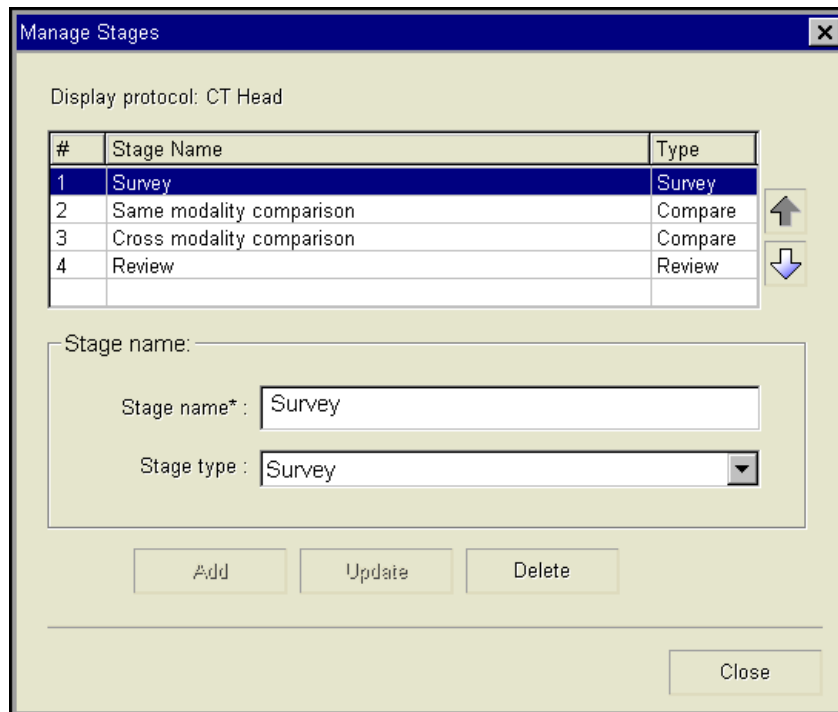
- 1 Click the **Display Protocol** button at the top of the **work area**.



- 2 Point to **Stages**, and then click **Manage Stages**.

The **Manage Stages** dialog box is displayed, listing all the stages in the current display protocol. The current stage is highlighted.

Figure 8-22 Manage Stages dialog box



- 3 In the **Stage name** box, enter the name of the stage. The name should describe the goal of the stage, for example, **Frontal Comparison**. You can enter up to 256 characters.
- 4 Click the **Stage type** box, and specify the context in which the stage is used. For details, see [“Types of display protocol stages”](#) on page 258.

- 5 Click **Add**.

The stage is added after the current stage. You can also rearrange the stage order. See “[Reordering display protocol stages](#)” on page 262.

- 6 Click **Close**, to close the **Manage Stages** dialog box.

Now you can continue to create or modify the display protocol. See “[Step 1: Specifying the layout and presentation settings](#)” on page 221 and “[Modifying the layout and presentation settings](#)” on page 233.

## Reordering display protocol stages

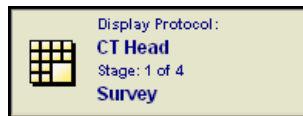
You can rearrange the [stage](#) order in the following situations:

- When you create a new [display protocol](#)
- When you modify the layout and presentation settings of the current display protocol

### Steps for this task

To reorder display protocol stages:

- 1 Click the **Display Protocol** button at the top of the [work area](#).



- 2 Point to **Stages**, and then click **Manage Stages**.

The **Manage Stages** dialog box is displayed, listing all the stages in the current display protocol. The current stage is highlighted. See [Figure 8-22](#) on page 261.



The following table describes the information about the display protocol stages.

Information	Meaning
#	Stage number. This number indicates the where the stage is in the current order.
Stage name	Name of the stage. It is the name that you entered when adding the stage.
Type	Context in which the stage is used. For details, see “ <a href="#">Types of display protocol stages</a> ” on page 258.

- 3 Click the stage you want to reorder. Alternatively, use the UP and DOWN arrow keys to select the stage.

The stage name and type are displayed under **Properties for selected stage**.

- 4 Move the stage up or down in the list:

If...	Then...
Moving the stage up one entry in the list	Click the <b>Up</b> icon. 
Moving the stage down one entry in the list	Click the <b>Down</b> icon. 

The stage is moved up or down accordingly. The stage number is also updated. For example, if the display protocol has four stages, and you moved stage **3** to be the first stage, its number is updated to **1**.

- 5 Click **Close**, to close the **Manage Stages** dialog box.

Now you can continue to create or modify the display protocol. See “[Step 1: Specifying the layout and presentation settings](#)” on page 221 and “[Modifying the layout and presentation settings](#)” on page 233.

## Modifying a display protocol stage

You can modify a [display protocol stage](#) in the following situations:

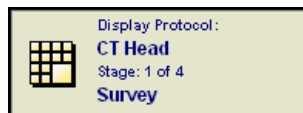
- When you create a new [display protocol](#)
- When you modify the layout and presentation settings of the current display protocol

You can modify the name and type of a display protocol stage. For details, see “[Types of display protocol stages](#)” on page 258.

### Steps for this task

To modify a display protocol stage:

- 1 Click the **Display Protocol** button at the top of the [work area](#). The button displays information about the applied display protocol and the current stage.



- 2 Point to **Stages**, and then click **Manage Stages**.

The **Manage Stages** dialog box is displayed, listing all the stages in the currently applied display protocol. The current stage is highlighted. See [Figure 8-22](#) on page 261.

For the displayed information about the stages, see the table in “[Reordering display protocol stages](#)” on page 262.

- 3 Click the stage whose properties you want to modify. Alternatively, use the UP and DOWN arrow keys to select the stage.



The name and type of the selected stage are displayed under **Properties for selected stage**.

- 4 Modify the stage properties.
- 5 Click **Update**.

The properties are updated in the list of stages.

- 6 Click **Close**, to close the **Manage Stages** dialog box.

Now you can continue to create or modify the display protocol. See “[Step 1: Specifying the layout and presentation settings](#)” on page 221 and “[Modifying the layout and presentation settings](#)” on page 233.

## Deleting a display protocol stage

You can permanently delete a [display protocol stage](#) from a [display protocol](#), in the following situations:

- When you create a new display protocol
- When you modify the layout and presentation settings of the current display protocol

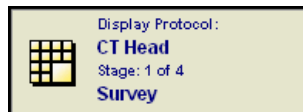
### Restriction for deleting a display protocol stage

At least one stage must remain in the display protocol.

### Steps for this task

To delete a display protocol stage:

- 1 Click the **Display Protocol** button at the top of the [work area](#). The button displays information about the applied display protocol and the current stage.



- 2 Point to **Stages**, and then click **Manage Stages**.

The **Manage Stages** dialog box is displayed, listing all the stages in the currently applied display protocol. See [Figure 8-22](#) on page 261.

For the displayed information about the stages, see the table in “[Reordering display protocol stages](#)” on page 262.

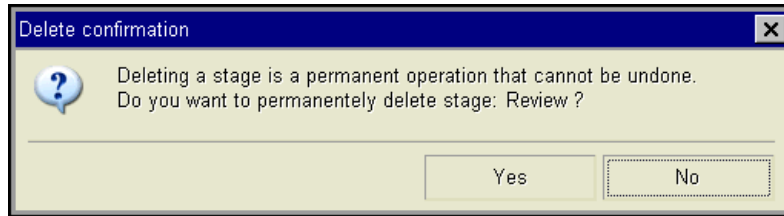
- 3 Click the stage you want to delete. Alternatively, use the UP and DOWN arrow keys to select the stage.

The name and type of the selected stage are displayed under **Properties for selected stage**.

- 4 Click **Delete**.

A confirmation message is displayed.

Figure 8-23 Delete Stage confirmation message



- 5 Click **Yes** to confirm the deletion.

The stage is removed from the list of stages. The next stage in the list is applied. If the last stage is deleted, the one before it is applied.

- 6 Click **Close**, to close the **Manage Stages** dialog box.

Now you can continue to create or modify the display protocol. See [“Step 1: Specifying the layout and presentation settings”](#) on page 221 and [“Modifying the layout and presentation settings”](#) on page 233.

---

## Managing display protocols

This section describes how to manage display protocols from a single location.

### In this section

This section contains the following topics:

Topic	See Page
Searching for display protocols	266
Reviewing information about a display protocol	273
Applying display protocols to studies	275
Arranging the ranking of display protocols	275
Copying a display protocol	276
Modifying the display protocol properties	276
Deleting a display protocol	281

## Searching for display protocols

This section describes how to find the display protocols that you want to manage.

### In this section

This section contains the following topics:

Topic	See Page
Step 1: Displaying the Display Protocol Explorer	267
Step 2: Specifying the search criteria	267
Step 3: Specifying the folder in which to search	269

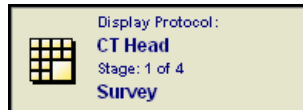
## Step 1: Displaying the Display Protocol Explorer

The **Display Protocol Explorer** enables you to manage **display protocols** from a single location.

### Steps for this task

To display the Display Protocol Explorer:

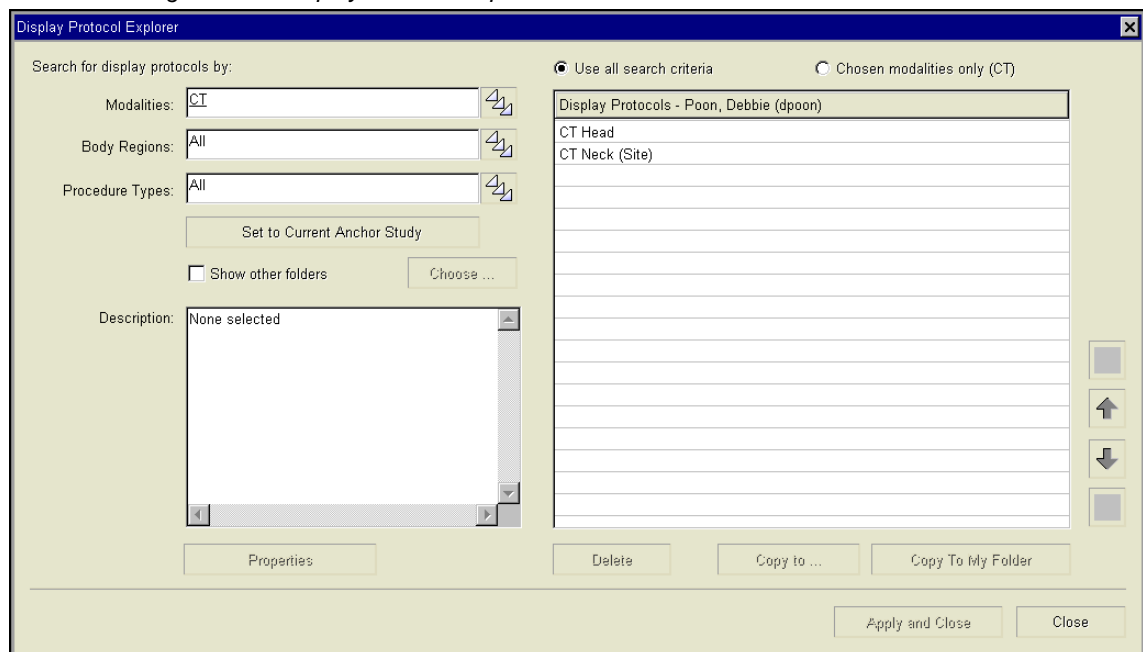
- 1 Click the **Display Protocol** button at the top of the **work area**. The button displays information about the currently applied displayed protocol.



- 2 Select **Manage Display Protocols** from the menu.

The **Display Protocol Explorer** is displayed.

Figure 8-24 Display Protocol Explorer



## Step 2: Specifying the search criteria

After displaying the **Display Protocol Explorer**, search for **display protocols** that you want to manage, by specifying the following search criteria:

- **Modalities**
- **Body Regions**
- **Procedure Types**

Figure 8-25 Display protocol search criteria

Search for display protocols by:

Modalities:

Body Regions:

Procedure Types:

Each search criterion can have one or more values. If no values are specified, the criterion is set to **All**, and a match is assumed.

### Steps for this task

To specify the search criteria:

- 1 Perform the following procedures.
  - “Specifying the Modalities filter criterion” on page 226
  - “Specifying the Body Regions filter criterion” on page 227
  - “Specifying the Procedure Types filter criterion” on page 228

#### Note:

- By default, the search criteria match the modality, body regions, and procedure types of the **anchor study**. If no study is currently displayed, all criteria are set to **All**.
- To reset the criteria to match the anchor study, click **Set to Current Anchor study**.

- 2 Specify whether you want to apply all search criteria, or the Modalities criterion only:

If...	Then...
Applying all search criteria	Click <b>Use all search criteria</b> . See <i>Figure 8-26</i> .
Applying the Modalities criterion only	Click <b>Chosen modalities only</b> .

Figure 8-26 Applying all search criteria

Use all search criteria       Chosen modalities only (CT)

### Step 3: Specifying the folder in which to search

Display protocols are organized into folders. After specifying the display protocol search criteria, specify the folder within which you want to perform a search. You can:

- Search for display protocols within your folder
- Search for display protocols within your folder and other folders:
  - System,
  - Site, and/or
  - Other users'

For details on the different types of display protocols, see “User, site, and system display protocols” on page 214.

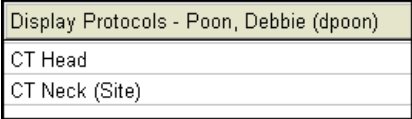
#### Searching within your personal folder only

To search within your personal folder only:

- Clear the **Show other folders** check box.

All the display protocols in your personal folder that match the search criteria are listed. Site display protocols and system display protocols are indicated by **(Site)** and **(McKesson)** appended to their names.

Figure 8-27 Matching display protocols in your personal folder



Display Protocols - Poon, Debbie (dpoon)
CT Head
CT Neck (Site)

You can now perform other related tasks. For details, see the following topics:

- “Reviewing information about a display protocol” on page 273
- “Applying display protocols to studies” on page 275
- “Arranging the ranking of display protocols” on page 275
- “Copying a display protocol” on page 276
- “Modifying the display protocol properties” on page 280
- “Deleting a display protocol” on page 281

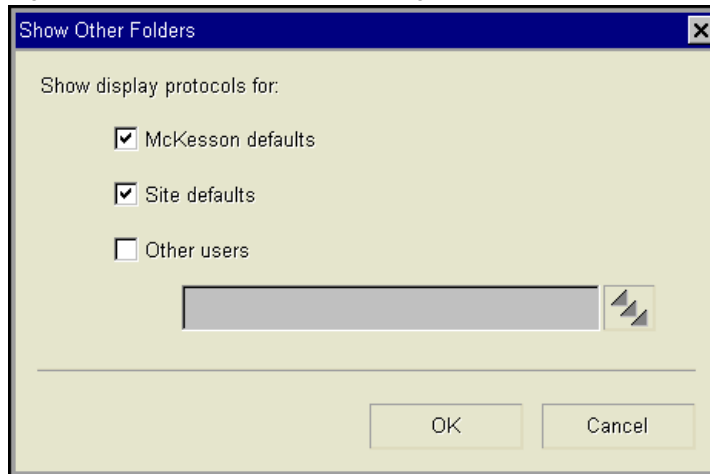
#### Searching within both your personal folder and other folders

To search within both your personal folder and other folders:

- 1 Select the **Show other folders** check box.
- 2 Click **Choose**.

The **Show Other Folders** dialog box is displayed.

Figure 8-28 Show Other Folders dialog box



- 3 Specify all the other folders within which you want to perform a search:

If...	Then...
Searching within the system folder	Select the <b>McKesson defaults</b> check box.
Searching within the site folder	Select the <b>Site defaults</b> check box.


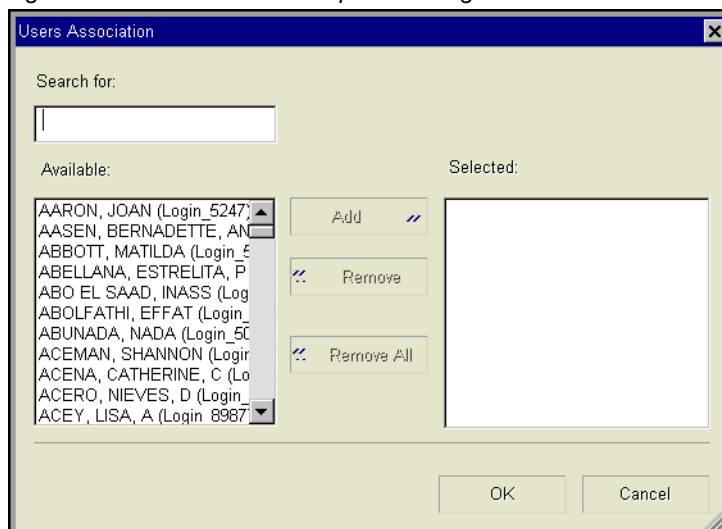
If...	Then... (Continued)
Searching within other users' folders (in alphabetical order)	<ol style="list-style-type: none"> <li>1 Select the <b>Other users</b> check box.</li> <li>2 Click the <b>picker</b> and the end of the text box.           <div style="text-align: center; margin: 5px 0;">  </div> <p>The <b>Users Association</b> picker dialog box is displayed. See <a href="#">Figure 8-29</a>.</p> </li> <li>3 In the <b>Available</b> list, click the names of the user. You can also find the user, by typing the name in the <b>Search For</b> box. The matching user is automatically selected in the list.           <hr style="width: 100%; border: 0.5px solid black; margin: 10px 0;"/> <p><b>Note:</b> Only users with an active user account are listed. An inactive user account prevents the user from logging on to Horizon Rad Station.</p> <hr style="width: 100%; border: 0.5px solid black; margin: 10px 0;"/> </li> <li>4 Click <b>Add</b>. The selected users are moved to the <b>Selected</b> list. To remove a user from the <b>Selected</b> list, select the user and click <b>Remove</b>.</li> <li>5 Click <b>OK</b>, to close the <b>Users Association</b> picker dialog box.</li> </ol>

Figure 8-29 Users Association picker dialog box

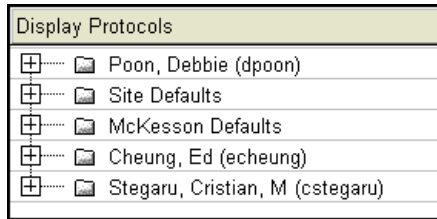


- 4 Click **OK**.



Your personal folder and the selected folders are displayed. The other users' folders are displayed in alphabetical order.

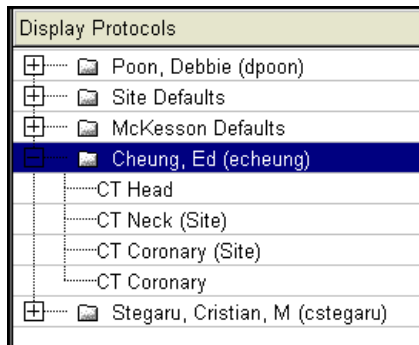
Figure 8-30 Selected folders are displayed



- Expand the folder within which you want to list the matching display protocols, by clicking the plus (+) sign beside it.

All the display protocols within the folder that match the search criteria are listed. Site display protocols and system display protocols are indicated by **(Site)** and **(McKesson)** appended to the name.

Figure 8-31 Display protocols belonging to another user are listed



You can now perform other related tasks. For details, see the following topics:

- [“Reviewing information about a display protocol”](#) on page 273
- [“Applying display protocols to studies”](#) on page 275
- [“Arranging the ranking of display protocols”](#) on page 275
- [“Copying a display protocol”](#) on page 276
- [“Modifying the display protocol properties”](#) on page 280
- [“Deleting a display protocol”](#) on page 281

## Reviewing information about a display protocol

You can review information about a [display protocol](#).

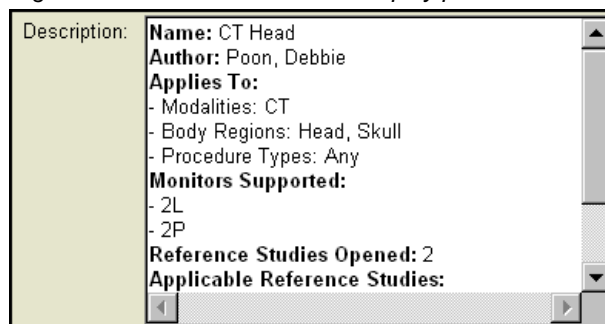
### Steps for this task

To review information about a display protocol:

- 1 Find the display protocols of your interest. See [“Searching for display protocols”](#) on page 266.
- 2 Click the display protocol whose information you want to review.

The information about the selected display protocol is displayed in the **Description** box, below the search criteria. For the description of the information, see [“Information that you can review about a display protocol”](#) on page 273.

Figure 8-32 Information about a display protocol



You can also modify the display protocol information. See [“Modifying the display protocol properties”](#) on page 280.

### Information that you can review about a display protocol

The following table describes the display protocol information that can be reviewed.

Information	Meaning
Name	Name of the display protocol.
Author	Name of the last user who saved the display protocol. The name is in the format of <i>last name, first name</i> .

Information	Meaning (Continued)
Applies To	<p>Anchor Applicability Rules, which are filter criteria that determine whether the display protocol is relevant to a study. For details, see <a href="#">"What is a relevant display protocol"</a> on page 216.</p> <p>The filter criteria include:</p> <ul style="list-style-type: none"> <li>• <a href="#">Modalities</a></li> <li>• <a href="#">Body regions</a></li> <li>• <a href="#">Procedure types</a></li> </ul>
Monitors Supported	<p>Monitor configurations to which the display protocol can be applied. For example,</p> <ul style="list-style-type: none"> <li>• <b>1P</b> (One Portrait monitor)</li> <li>• <b>2P</b> (Two Portrait monitors)</li> <li>• <b>1L-2P</b> (One Landscape monitor and Two Portrait monitors), and so on.</li> </ul>
Reference Studies Opened	<p>Number of <a href="#">reference studies</a> to open when the display protocol is applied to a study. If the display protocol is configured not to automatically open reference studies, <b>None</b> is displayed.</p>
Applicable Reference Studies	<p>Filter criteria that identify reference studies to which the display protocol is relevant. The filter criteria include:</p> <ul style="list-style-type: none"> <li>• Modalities</li> <li>• Body regions</li> <li>• Procedure types</li> </ul>

## Applying display protocols to studies

You can manually apply any [display protocol](#) to the study you are currently viewing. This display protocol does not need to be relevant to the study, and can belong to another Horizon Rad Station user. For details on relevant display protocols, see [“What is a relevant display protocol”](#) on page 216.

---

**Note:** You can also quickly apply a display protocol from the [main toolbar](#). See [“Manually applying a display protocol”](#) on page 218.

---

### Steps for this task

To apply a display protocol:

- 1 Find the display protocols of your interest. See [“Searching for display protocols”](#) on page 266.
- 2 Click the display protocol you want to apply.
- 3 Click **Apply and Close**.

The selected display protocol is applied, and the **Display Protocol Explorer** is closed. For details, see [“Overview of applying a display protocol”](#) on page 215.

## Arranging the ranking of display protocols

You can arrange the ranking of existing [display protocols](#). For details on ranking, see [“Selecting the most appropriate display protocol”](#) on page 217.

---

**Note:** You can also:

- Set a display protocol as the default when you create it. For details, see [“Creating a display protocol”](#) on page 221.
  - Modify the ranking of the currently applied display protocol. For details, see [“Modifying the ranking of the current display protocol”](#) on page 239.
- 

### Restrictions for arranging the ranking of display protocols





The following restrictions exist:

- You cannot arrange the ranking of system display protocols.
- You can arrange the ranking within the folder. However, you cannot arrange the ranking of the folders.
- To arrange the ranking of site display protocols and other users' display protocols, you must have the authority to modify the folder in which the display protocol is saved. For example, you can modify the ranking of site display protocols listed in your personal folder, but you may not modify the ranking of the ones in the site folder. For details, contact your system administrator.

## Steps for this task

To arrange the ranking of display protocols:

- 1 Find the display protocols of your interest. See [“Searching for display protocols”](#) on page 266.
- 2 Click the display protocol whose rank you want to arrange. Alternatively, use the UP and DOWN arrow keys to select the display protocol.
- 3 Arrange the ranking as follow:

If...	Then...
Moving the display protocol to the top of the list, to make it the default	Click the <b>Top</b> icon. 
Moving the display protocol up one entry in the list	Click the <b>Up</b> icon. 
Moving the display protocol down one entry in the list	Click the <b>Down</b> icon. 
Moving the display protocol to the bottom of the list	Click the <b>Down</b> icon. 

**Note:** The icons are dimmed if you do not have the authority to modify the folder that contains the display protocol, or if the display protocol cannot be moved up or down the list further.

The display protocol is moved up or down accordingly.

## Copying a display protocol

You can create a [display protocol](#) by copying an existing one. You can copy a display protocol in the following ways:

- From a folder other than your own, to your personal folder.
- From a folder, to other folders.

### Restrictions for copying a display protocol to other folders

The following restrictions exist:

- You cannot copy the Generic display protocol.
- The source folder cannot be the destination folder.
- The display protocol you want to copy cannot have the same name as any existing display protocol in the destination folders.

- To copy a display protocol to other folders, you must have the authority to modify the source folder. For details, contact your system administrator.

### Copying a display protocol to your personal folder

You can copy a display protocol from the following folders, to your personal folder:

- System folder
- Site folder
- Another user's folder

To copy a display protocol to your personal folder:

- 1 Find the display protocols of your interest. See [“Searching for display protocols”](#) on page 266.
- 2 Click the display protocol you want to copy. Alternatively, use the UP and DOWN arrow keys to select the display protocol.
- 3 Click **Copy To My Folder**. This button is dimmed if you do not have the authority to modify the source folder.

The display protocol is copied to your personal folder, and becomes one of your personal display protocols.

---

**Note:** If the **Duplicate Display Protocols Already Exist** message is displayed, see [“Troubleshooting display protocols”](#) on page 380.

---

### Copying a display protocol to other folders

A display protocol can be copied to the following folders:

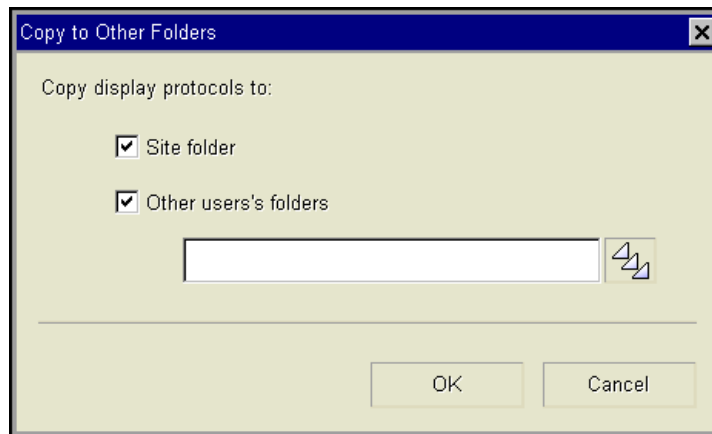
- Site folder
- Other users' folders

To copy a display protocol to other folders:

- 1 Find the display protocols of your interest. See [“Searching for display protocols”](#) on page 266.
- 2 Click the display protocol you want to copy. Alternatively, use the UP and DOWN arrow keys to select the display protocol.
- 3 Click **Copy To**. This button is dimmed if you do not have the authority to modify the source folder.


The **Copy to Other Folders** dialog box is displayed.

Figure 8-33 Copy to Other Folders dialog box



- 4 Specify the destination folders for the display protocol:

If...	Then...
Copying to the site folder	Select the <b>Site folder</b> check box. <hr/> <b>Note:</b> This check box is disabled if the selected display protocol is a site display protocol.

If...	Then... (Continued)
Copying to other users' folders	<ol style="list-style-type: none"> <li>1 Select the <b>Other user's folders</b> check box.</li> <li>2 Click the <b>picker</b> and the end of the text box.   <p>The <b>Users Association</b> picker dialog box is displayed. See <a href="#">Figure 8-29</a> on page 271.</p> </li> <li>3 In the <b>Available</b> list, click the names of the user. You can also find the user, by typing the name in the <b>Search For</b> box. The matching user is automatically selected in the list.</li> </ol> <hr/> <p><b>Note:</b> Only users with an active user account are listed. An inactive user account prevents the user from logging on to Horizon Rad Station.</p> <hr/> <ol style="list-style-type: none"> <li>4 Click <b>Add</b>. The selected users are moved to the <b>Selected</b> list. To remove a user from the <b>Selected</b> list, select the user and click <b>Remove</b>.</li> <li>5 Click <b>OK</b>, to close the <b>Users Association</b> picker dialog box.</li> </ol>

- 5 Click **OK**.

The display protocol is copied to the destination folders, and becomes a site display protocol and/or other users' personal display protocol.

---

**Note:** If the **Duplicate Display Protocols Already Exist** message is displayed, see ["Troubleshooting display protocols"](#) on page 380.

---



## Modifying the display protocol properties

You can modify the General properties and/or Reference Studies properties of [display protocols](#) that are not currently applied to an open study. For details, see [“Attributes of a display protocol”](#) on page 212.

---

**Note:** To modify the General properties and/or Reference Studies properties of the currently applied display protocol, see [“Modifying the properties of the current display protocol”](#) on page 235.

---

### Restrictions for modifying properties of a display protocol

The following restrictions exist:

- You cannot modify the Generic display protocol.
- You must have the authority to modify the folder in which the display protocol is saved. For example, you can modify a site display protocol listed in your personal folder, but you may not modify the ones in the site folder. For details, contact your system administrator.

### Steps for this task

To modify properties of a display protocol:

- 1 Find the display protocols of your interest. See [“Searching for display protocols”](#) on page 266.
- 2 Click the display protocol whose properties you want to modify.

The information about the selected display protocol is displayed in the **Description** box, below the search criteria. For the description of the information, see [“Information that you can review about a display protocol”](#) on page 273.

- 3 Click **Properties**.

The **Display Protocol Properties** dialog box is displayed. See [Figure 8-10](#) on page 236.

- 4 Modify the properties as follows:

If...	Then...
Modifying the General properties	<ol style="list-style-type: none"> <li>1 Click the <b>General</b> tab.</li> <li>2 Modify the properties. For details, see step 3 of <a href="#">“Modifying the General properties”</a> on page 235.</li> </ol>
Modifying the Reference Studies properties	<ol style="list-style-type: none"> <li>1 Click the <b>Reference Studies</b> tab.</li> <li>2 Modify the properties. For details, see steps 4-5 of <a href="#">“Modifying the Reference Studies properties”</a> on page 237.</li> </ol>

- 5 Click **OK**, to save the changes.

## Deleting a display protocol

A **display protocol** can be permanently deleted.

---

**Note:** You can also quickly delete the display protocol currently applied to an open study. See “**Deleting the current display protocol**” on page 241.

---

### Restrictions for deleting display protocols

The following restrictions exist:

- The display protocol must not be currently used.
- The Generic display protocol cannot be deleted.
- You must have the authority to modify the folder in which the display protocol is saved. For example, you can delete a site display protocol listed in your personal folder, but you may not delete the ones in the site folder. For details, contact your system administrator.

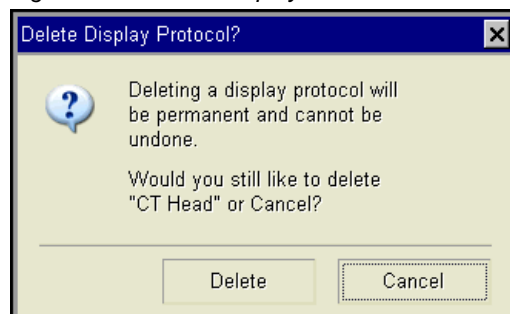
### Steps for this task

To delete a display protocol:

- 1 Find the display protocols of your interest. See “**Searching for display protocols**” on page 266.
- 2 Click the display protocol you want to delete.
- 3 Click **Delete**. This button is dimmed if you do not have the authority to modify the folder that contains the display protocol.

A confirmation message is displayed.

*Figure 8-34 Delete Display Protocol confirmation message*



- 4 Click **Delete**, to confirm the deletion.

The display protocol is deleted.

## Saving a display protocol when closing a study

If you use the **Display Protocol Editor** to specify the content and presentation settings (**Window/Level**, **Zoom/Pan** settings, and image orientation) of **viewports**, and then **close the study** without saving the display protocol, the **Display Protocol Has Changed** dialog box is displayed.

**Note:** Site and system display protocols cannot be saved using Horizon Rad Station Distributed. See also “**User, site, and system display protocols**” on page 214.

For details on the **Display Protocol Editor**, see “**Using the Display Protocol Editor**” on page 243.

Figure 8-35 *Display Protocol Has Changed dialog box (Display protocol contains one stage)*

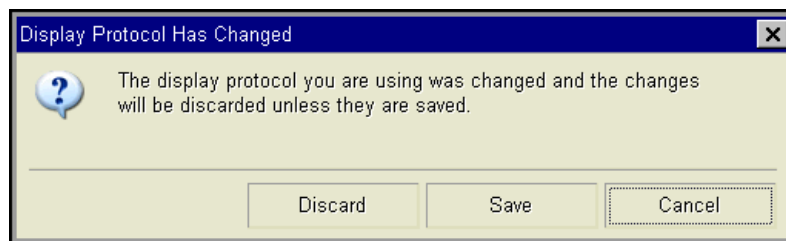
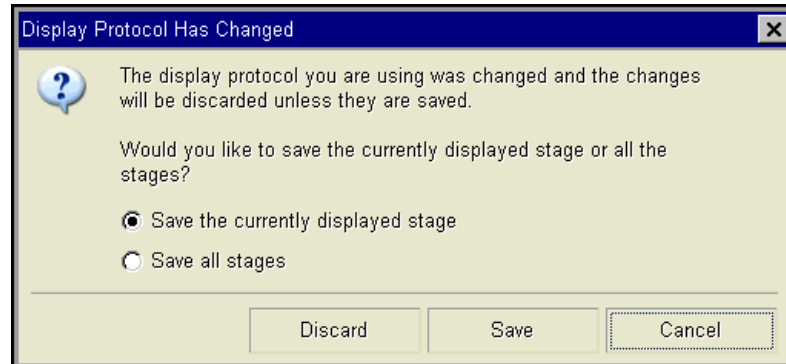


Figure 8-36 *Display Protocol Has Changed dialog box (Display protocol contains multiple stages)*



**Steps for this task**

To save the display protocol changes:

<b>If...</b>	<b>Then...</b>
Display protocol contains one <b>stage</b>	Click <b>Save</b> .
Display protocol contains multiple stages	<ol style="list-style-type: none"><li>1 Specify the stages whose layout and presentation changes you want to save. The available options are:<ul style="list-style-type: none"><li>• <b>Save the currently displayed stage</b></li><li>• <b>Save all stages</b></li></ul></li><li>2 Click <b>Save</b>.</li></ol>



# Chapter 9 - Setting the Horizon Rad Station preferences

This section describes how to set preferences for Horizon Rad Station.

## In this section

This section contains the following topics:

Topic	See Page
Appearance preferences	285
Assign Study preferences	287
Auto Display preferences	290
Confirmation preferences	291
Display Protocol preference	293
Image compression preferences	295
Main toolbar preferences	296
Power Scrolling preferences	298
Right-click menu preferences	301
User shortcuts	304
User Interaction preferences	313

## Appearance preferences

You can specify the appearance of the Horizon Rad Station application.

---

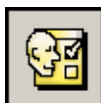
**Note:** The modification takes effect once you exit Horizon Rad Station.

---

### Steps for this task

To set Appearance preferences:

- 1 Click the **Preferences** icon on the main toolbar.

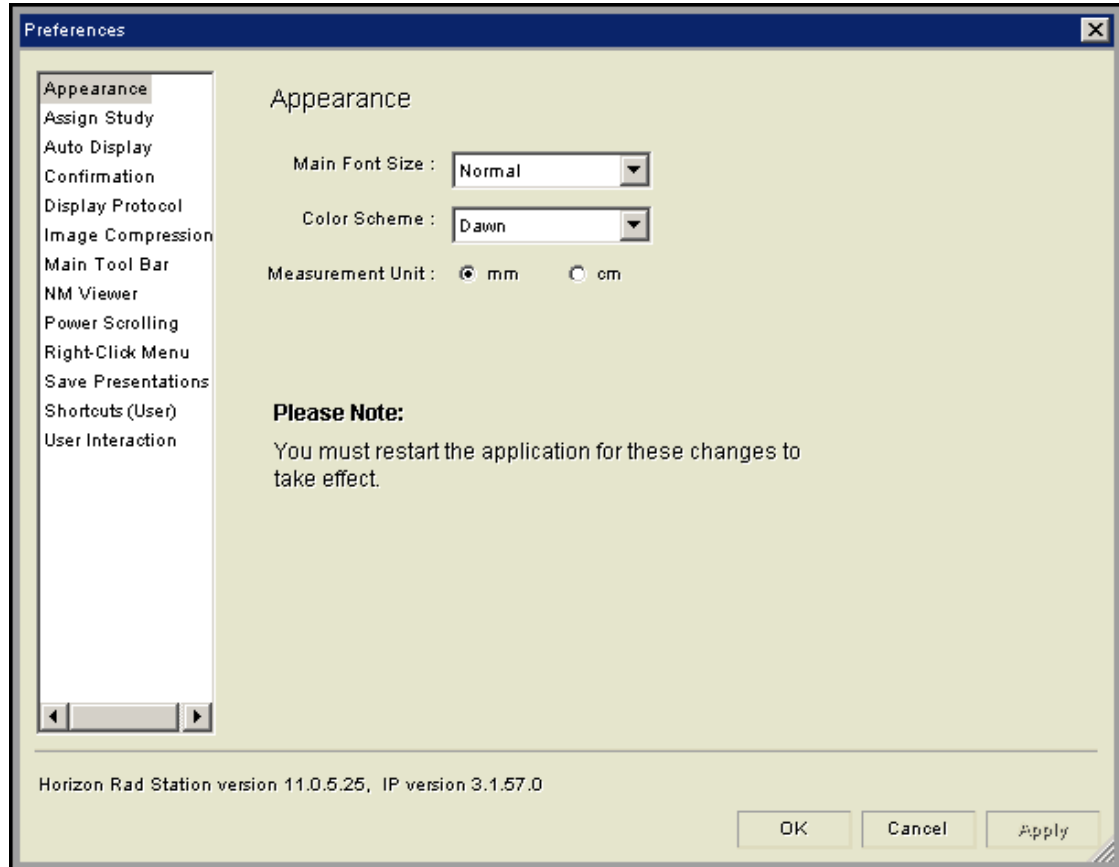


Alternatively, right-click an image, and then select Preferences.

The **Preferences** dialog box is displayed.

- 2 Select **Appearance** in the left pane. The **Appearance** preferences are listed on the right.

Figure 9-1 Appearance preferences



- 3 Click the **Main Font Size** box, and then specify the size of all letters and numbers in Horizon Rad Station. The available options are:
  - **Small**
  - **Normal**
  - **Large**
  - **Larger**
- 4 Click the **Color Scheme** box, and then specify the color scheme of your choice. The available options are:
  - **Night**
  - **Dawn**
- 5 Specify the **annotation** measurement unit. The available options are:
  - **mm**
  - **cm**

- 6 Do one of the following:
  - To apply the preferences, click **Apply**.
  - To apply the preferences and close the **Preferences** dialog box, click **OK**.

## Assign Study preferences

Assign Study preferences specify how studies are assigned when you close them as **Reviewed** or **Needs Over-Read**. For details, see “[Changing the study status to Reviewed or Needs Over-Read](#)” on page 319.

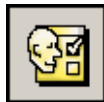
You can configure Horizon Rad Station to:

- Assign the studies to any Horizon Medical Imaging™ user
- Assign the studies to a particular user
- Display the **Assign Study** dialog box, which asks you how to assign the studies

### Steps for this task

To set Assign Study preferences:

- 1 Click the **Preferences** icon on the main toolbar.



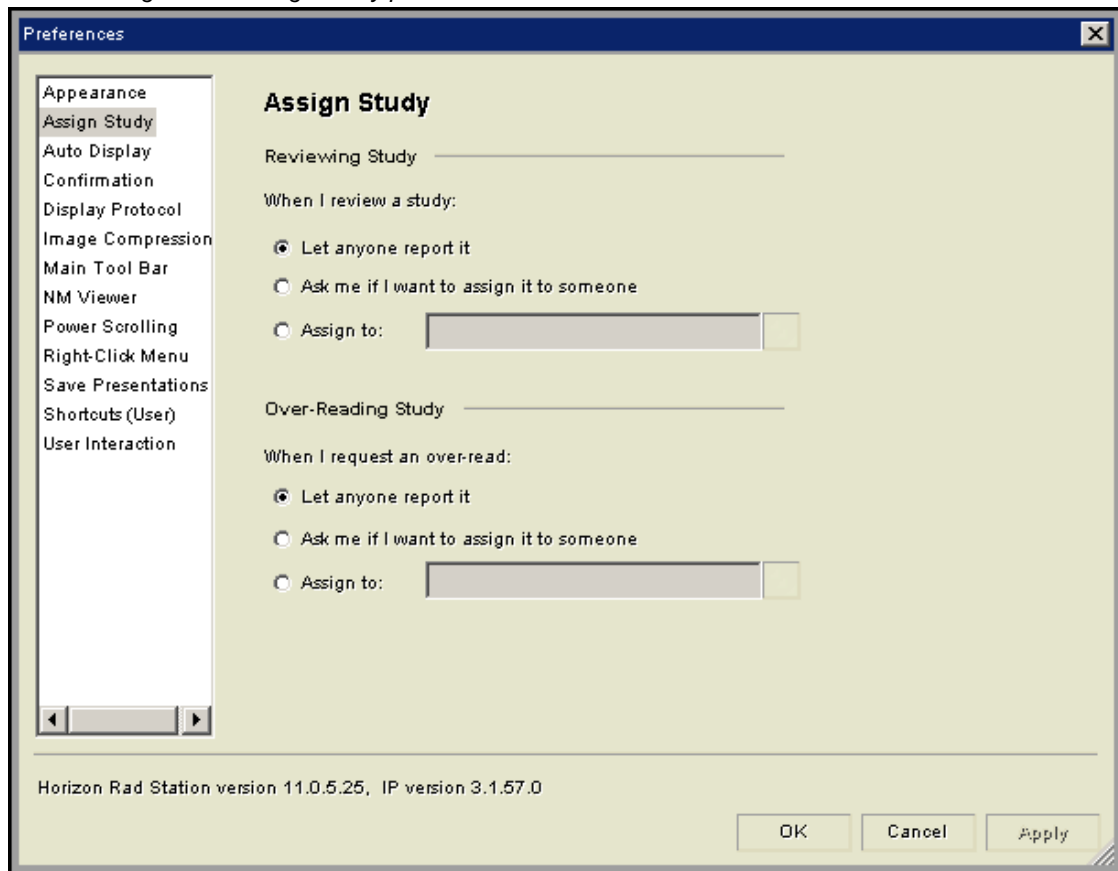
Alternatively, right-click an image, and then select **Preferences**.

The **Preferences** dialog box is displayed.

- 2 Select **Assign Study** in the left pane. The **Assign Study** preferences are listed on the right.



Figure 9-2 Assign Study preferences



- 3 Under **Reviewing Study**, specify how Reviewed studies are assigned:

If...	Then...
Assigning the study to any Horizon Medical Imaging™ user	Click <b>Let anyone report it</b> .
Asking you how to assign the study	Click <b>Ask me if I want to assign it to someone</b> .


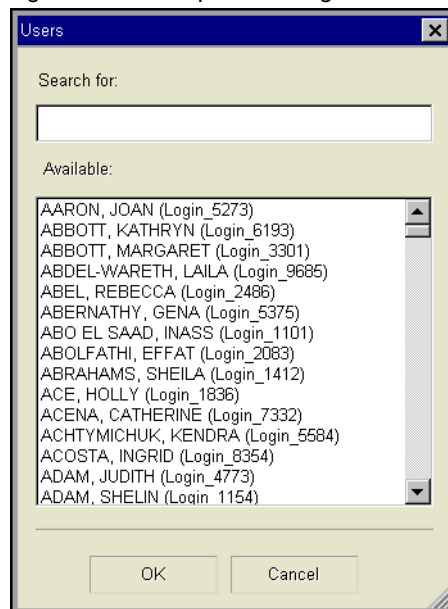
If...	Then... (Continued)
Assigning the study to a particular user	<ol style="list-style-type: none"> <li>1 Click <b>Assign to</b>.</li> <li>2 Click the <b>picker</b> at the end of the <b>Assign to</b> box.  </li> <li>3 In the <b>Available</b> list, click the user to whom you want to assign the study. You can also find the user by typing the name in the <b>Search for</b> box. The matching user is automatically selected in the list.</li> <li>4 Click <b>OK</b>.</li> </ol>

Figure 9-3 Users picker dialog box



- 4 Under **Over Reading Study**, repeat step 3, to specify how Needs Over-Read studies are assigned.
- 5 Do one of the following:
  - To apply the preferences, click **Apply**.
  - To apply the preferences and close the **Preferences** dialog box, click **OK**.

## Auto Display preferences

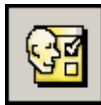
Auto Display preferences specify what is displayed automatically when an **anchor study** is opened. You can configure to display the following items:

- All flagged images in a **Survey window**. For details on Survey window, see “**Zoom window and Survey window**” on page 46.
- The study in a Survey window, if it is of a **modality** configured for your site.

### Steps for this task

To set Auto Display preferences:

- 1 Click the **Preferences** icon on the main toolbar.

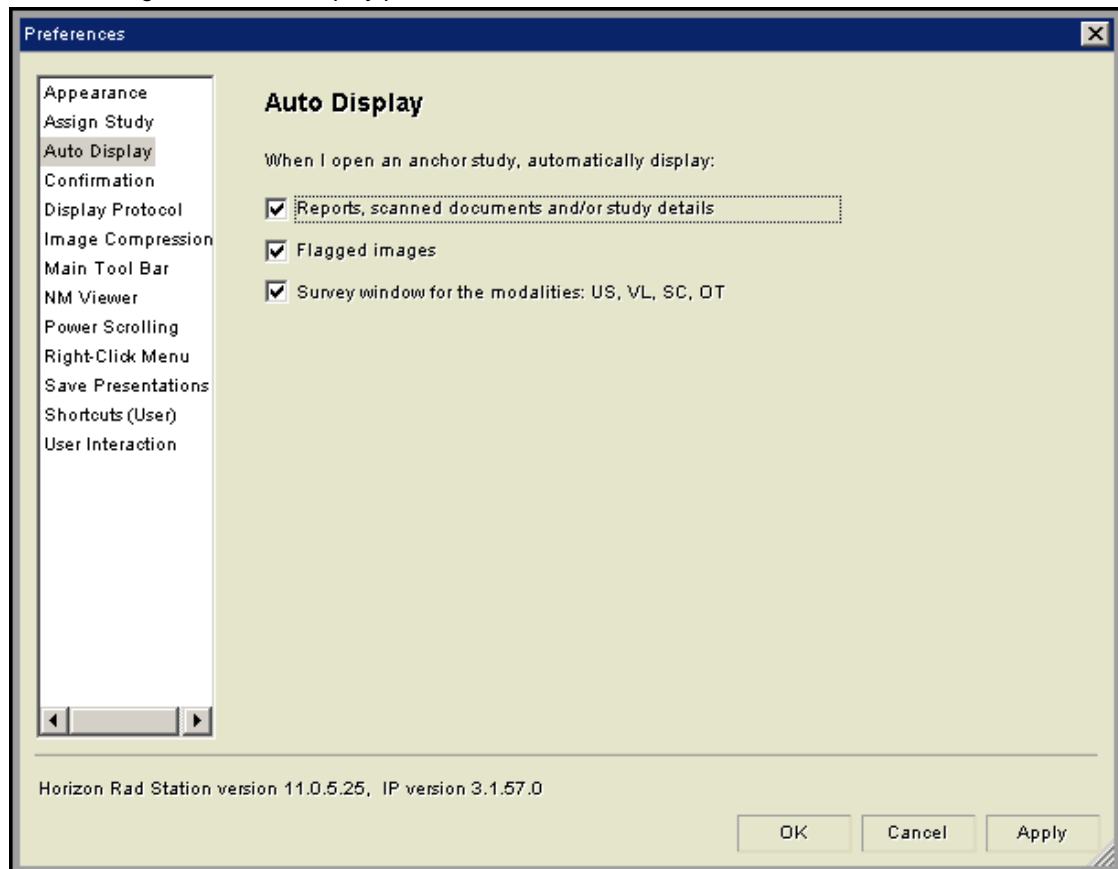


Alternatively, right-click an image, and then select **Preferences**.

The **Preferences** dialog box is displayed.

- 2 Select **Auto Display** in the left pane. The **Auto Display** preferences are listed on the right.

Figure 9-4 Auto Display preferences



- 3 Specify what is displayed automatically when an anchor is opened, by selecting or clearing the following check boxes.

Check box	Meaning (If selected)
Flagged images	Display all flagged images in a Survey window.
Survey window for the modalities	Display the anchor study of the specified modality, in a Survey window.  <b>Note:</b> The listed modalities are configured for your site. For details, contact McKesson Medical Imaging.

- 4 Do one of the following:
- To apply the preferences, click **Apply**.
  - To apply the preferences and close the **Preferences** dialog box, click **OK**.

## Confirmation preferences

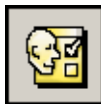
Confirmation preferences specify whether the following dialog boxes are displayed:

- Assign Study Needs Over-Read** dialog box, when you change the study status to **Needs Over-Read** (See “Changing the study status to Reviewed or Needs Over-Read” on page 319)
- Assign Study Reviewed** dialog box, when you change the study status to **Reviewed**
- Change Reference Study Status** dialog box, when you change the status of the **anchor study** to Needs Over-Read, Reviewed, **Dictated**, or **Reported**, and the study has **grouped studies** and/or the **reference studies** are unreported (See “Changing the study status to match the status of the anchor study” on page 328)

### Steps for this task

To set Confirmation preferences:

- 1 Click the **Preferences** icon on the main toolbar.

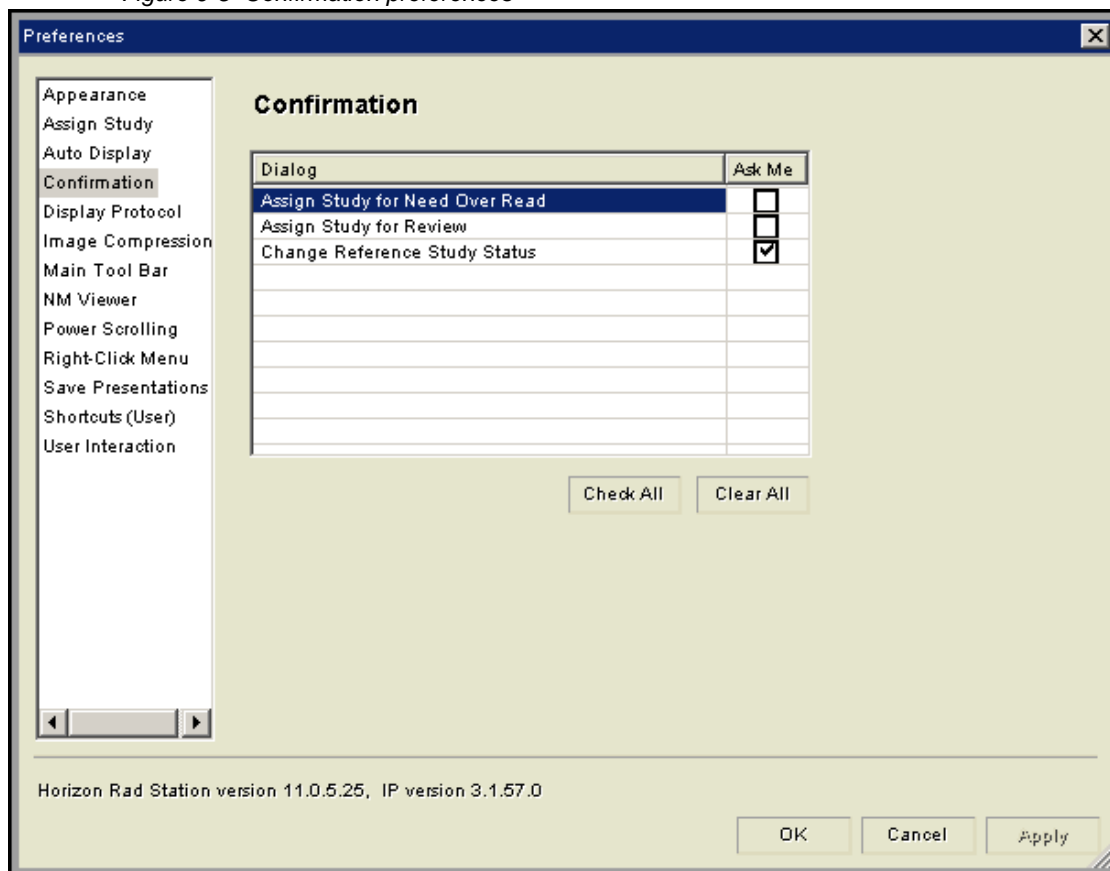


Alternatively, right-click an image, and then select **Preferences**.

The **Preferences** dialog box is displayed.

- 2 Select **Confirmation** in the left pane. The **Confirmation** preferences are listed on the right.

Figure 9-5 Confirmation preferences



3 Select or clear the **Ask Me** check box for the following options:

Option	Meaning (If selected)
Assign Study for Need Over Read	<p>Display the <b>Assign Study Needs Over-Read</b> dialog box, in which you assign the study to any Horizon Medical Imaging™ user, or a particular authorized user.</p> <p>If the dialog box is not displayed, the study is assigned according to the Assign Study preferences. For details, see <a href="#">"Assign Study preferences"</a> on page 287.</p>

Option	Meaning (If selected) (Continued)
Assign Study for Review	<p>Display the <b>Assign Study Reviewed</b> dialog box, in which you assign the study to any Horizon Medical Imaging™ user, or a particular authorized user.</p> <p>If the dialog box is not displayed, the study is assigned according to the Assign Study preferences. For details, see <a href="#">“Assign Study preferences”</a> on page 287.</p>
Change Reference Study Status	<p>Display the <b>Change Reference Study Status</b> dialog box, in which you specify which grouped and/or reference studies whose status you want to change.</p>

Alternatively, click **Check All** to select all of the options.

- 4 Do one of the following:
  - To apply the preferences, click **Apply**.
  - To apply the preferences and close the **Preferences** dialog box, click **OK**.

## Display Protocol preference

Display Protocol preferences specify whether studies relevant for interpreting the [anchor study](#) are opened automatically, when a [display protocol](#) is applied. For an overview of display protocols, see [“About display protocols”](#) on page 212.

---

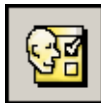
**Note:** Each display protocol also specifies whether relevant studies are opened when it is applied to the anchor study. Your preferences are applicable only when the currently applied display protocol is configured to automatically open relevant studies. Otherwise, relevant studies are not opened, regardless of your preferences.

---

### Steps for this task

To set Display Protocol preferences:

- 1 Click the **Preferences** icon on the main toolbar.

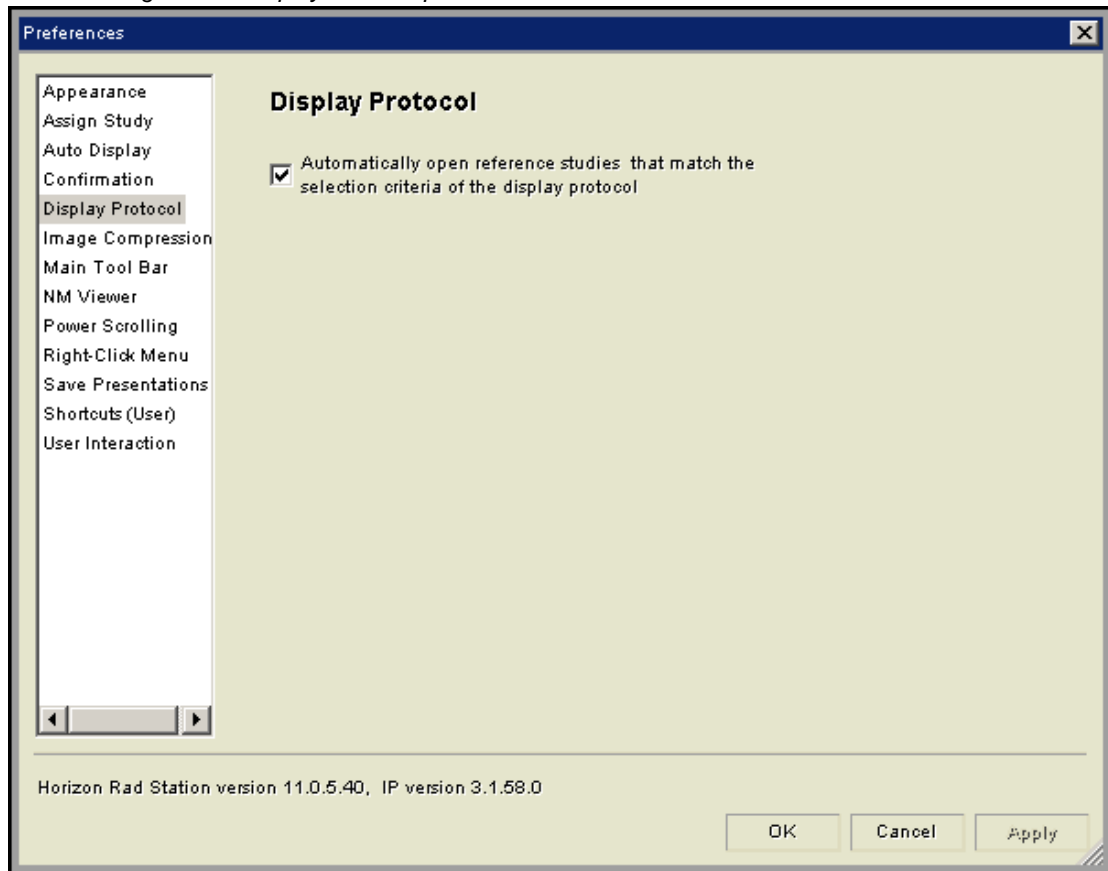


Alternatively, right-click an image, and then select **Preferences**.

The **Preferences** dialog box is displayed.

- 2 Select **Display Protocol** in the left pane. The **Display Protocol** preferences are displayed on the right.

Figure 9-6 Display Protocol preference



3 Specify whether relevant studies are opened automatically:

If...	Then...
Opening relevant studies automatically	Select the <b>Automatically open reference studies that match the selection criteria of the display protocol</b> check box.
Not opening relevant studies automatically	Clear the check box.

4 Do one of the following:

- To apply the preferences, click **Apply**.
- To apply the preferences and close the **Preferences** dialog box, click **OK**.

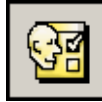
## Image compression preferences

Image compression preferences specify which image compression ratio is automatically applied to studies, based on the modality.

### Steps for this task

To set the image compression preferences:

- 1 Click the **Preferences** icon on the main toolbar.

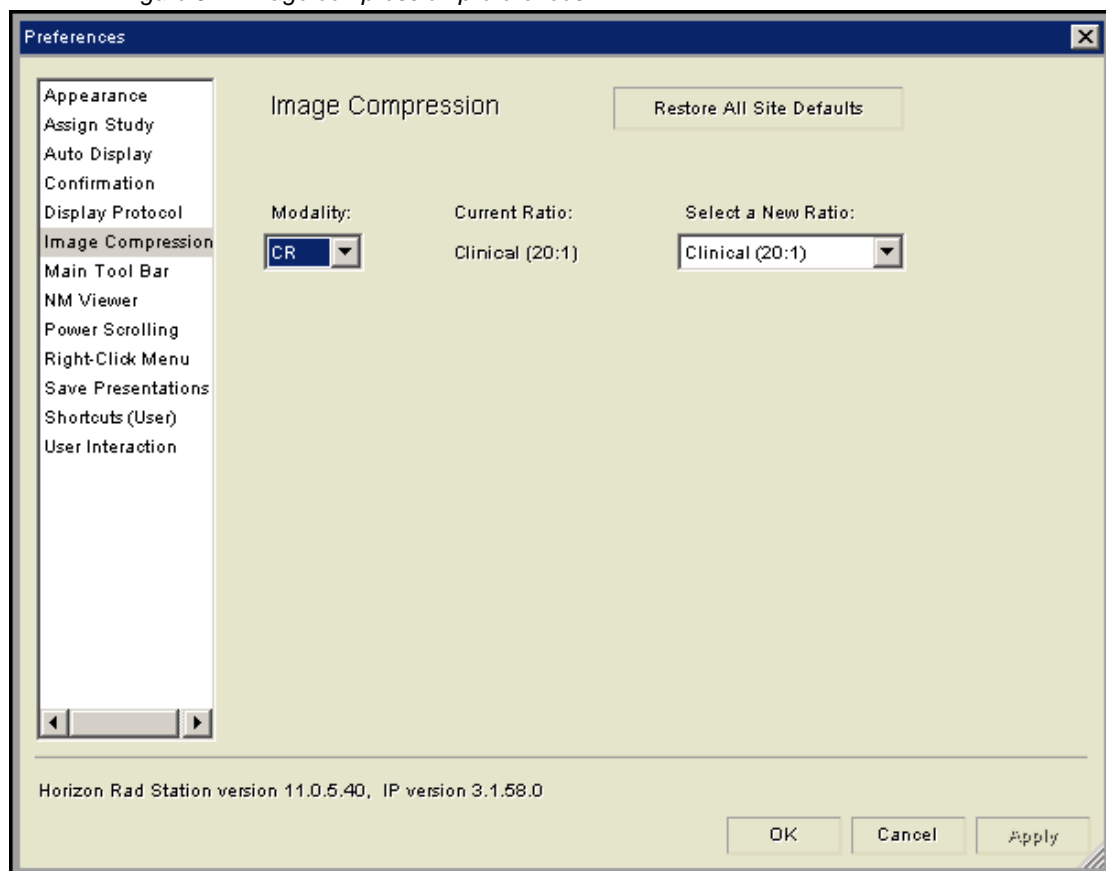


Alternatively, right-click an image, and then select **Preferences**.

The **Preferences** dialog box is displayed.

- 2 Select **Image Compression** in the left pane. The **Image Compression** preferences are displayed on the right.

Figure 9-7 Image compression preferences



- 3 Click the **Modality** box, and then select the modality for which you want to change the compression ratio.



- 4 Click the **Select a New Ratio** box, and then select a compression ratio from the list.
- 5 Do one of the following:
  - To apply the preferences, click **Apply**.
  - To apply the preferences and close the **Preferences** dialog box, click **OK**.

---

**Note:** You can modify the compression ratio for a single study only. For details, see [“Changing image compression”](#) on page 137.

---

## Main toolbar preferences

Main toolbar preferences specify which icons are displayed. For details on the [main toolbar](#), see [“About the main toolbar”](#) on page 346.

### Default site settings

The default main toolbar contains the following icons, in the listed order:

- **Studies**
- **Find**
- **Annotate**
- **W/L**
- **Zoom**
- **Pan**
- **Flag**
- **Preferences**
- **Quit**

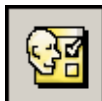
### Customizing the main toolbar

You can customize the main toolbar preferences, in the following ways:

- Add or remove icons
- Rearrange the order of the icons
- Show or hide the icon labels
- Reset the preferences to the default site settings.

To set the main toolbar preferences:

- 1 Click the **Preferences** icon on the main toolbar.



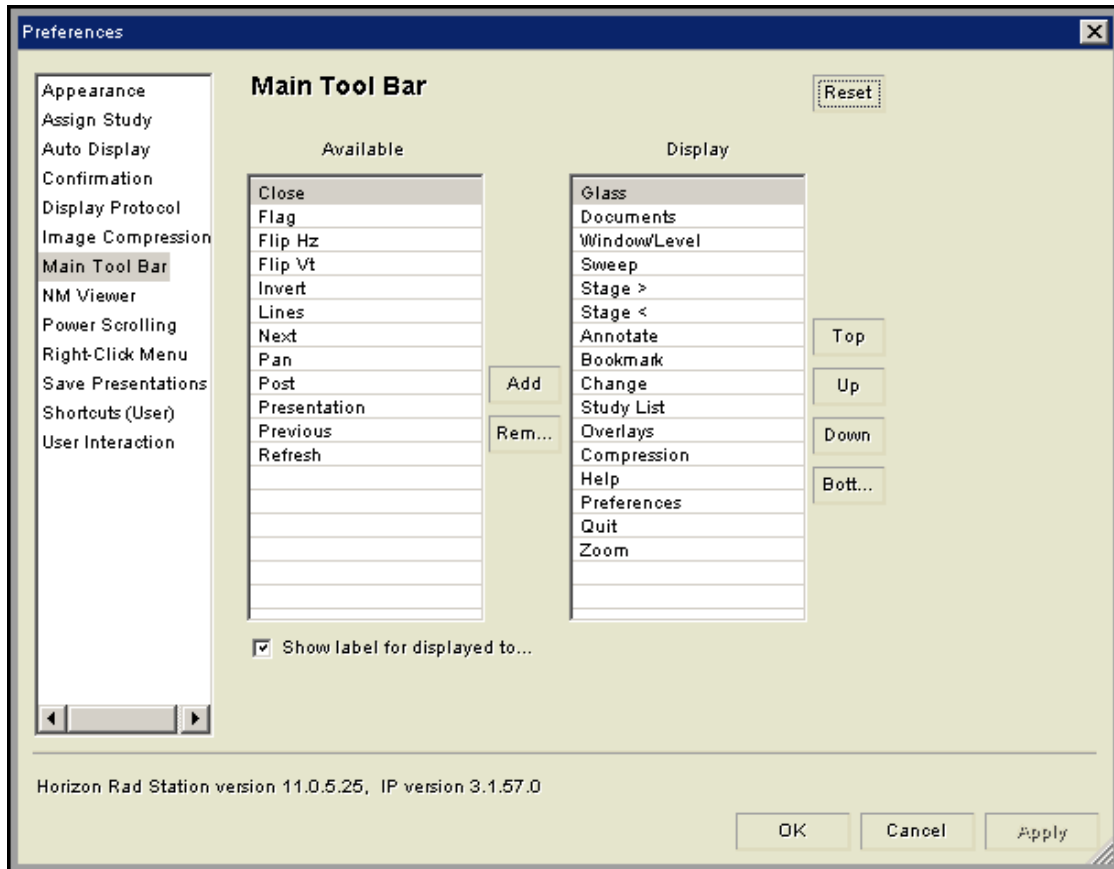
Alternatively, right-click an image, and then select **Preferences**.

The **Preferences** dialog box is displayed.

- Click **Main Toolbar** in the left pane.

The **Main Tool Bar Menu** preferences are listed on the right. The **Display** list shows the current main toolbar preferences.

Figure 9-8 Main Tool Bar preferences



- To add or remove icons:

If...	Then...
Adding icons	<p>From the <b>Available</b> list, select the icons, and then click <b>Add</b>.</p> <p>The icons are moved to the bottom of the <b>Display</b> list.</p>
Removing icons	<p>From the <b>Display</b> list, select the icons, and then click <b>Remove</b>.</p> <p>The icons are moved to the <b>Available</b> list.</p> <hr/> <p><b>Note:</b> At least one icon must remain in the <b>Display</b> list.</p>

- 4 To rearrange the order of the icons:

If...	Then...
Moving an icon up or down one entry on the main toolbar	From the <b>Display</b> list, select the icon, and then click <b>Up</b> or <b>Down</b> .
Moving an icon to the top or bottom of the main toolbar	From the <b>Display</b> list, select the icon, and then click <b>Top</b> or <b>Bottom</b> .

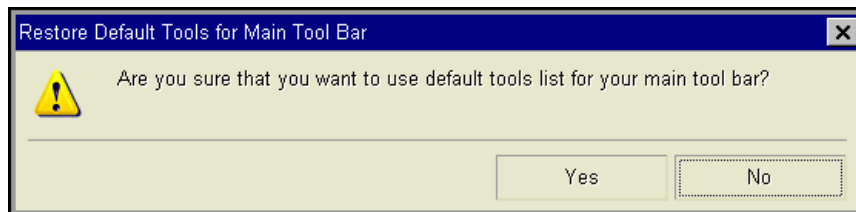
**Note:** Alternatively, you can **drag** the icon up and down the **Display** list.

- 5 To display or hide the icon labels:

If...	Then...
Displaying the labels	Select the <b>Show label for displayed tools</b> check box.
Hiding the labels	Clear the <b>Show label for displayed tools</b> check box.

- 6 To reset the preferences to the default site settings:

- Click **Reset**.
- A confirmation message is displayed. Click **Yes**.



- 7 Do one of the following:

- To apply the preferences, click **Apply**.
- To apply the preferences and close the **Preferences** dialog box, click **OK**.

## Power Scrolling preferences

The Power Scroll preferences specify whether to enable Power Scrolling, which enables you to quickly scroll through large multi-slice **series**. In addition, you can specify the following settings:

- Whether the scrolling speed is determined by how fast you move the mouse, or the location of the **mouser pointer**
- How to start Power Scrolling
- The direction to scroll through a series

For details on using Power Scrolling, see [“Moving through a series using Power Scrolling”](#) on page 56.

## Steps for this task

To set Power Scrolling preferences:

- 1 Click the **Preferences** icon on the main toolbar.

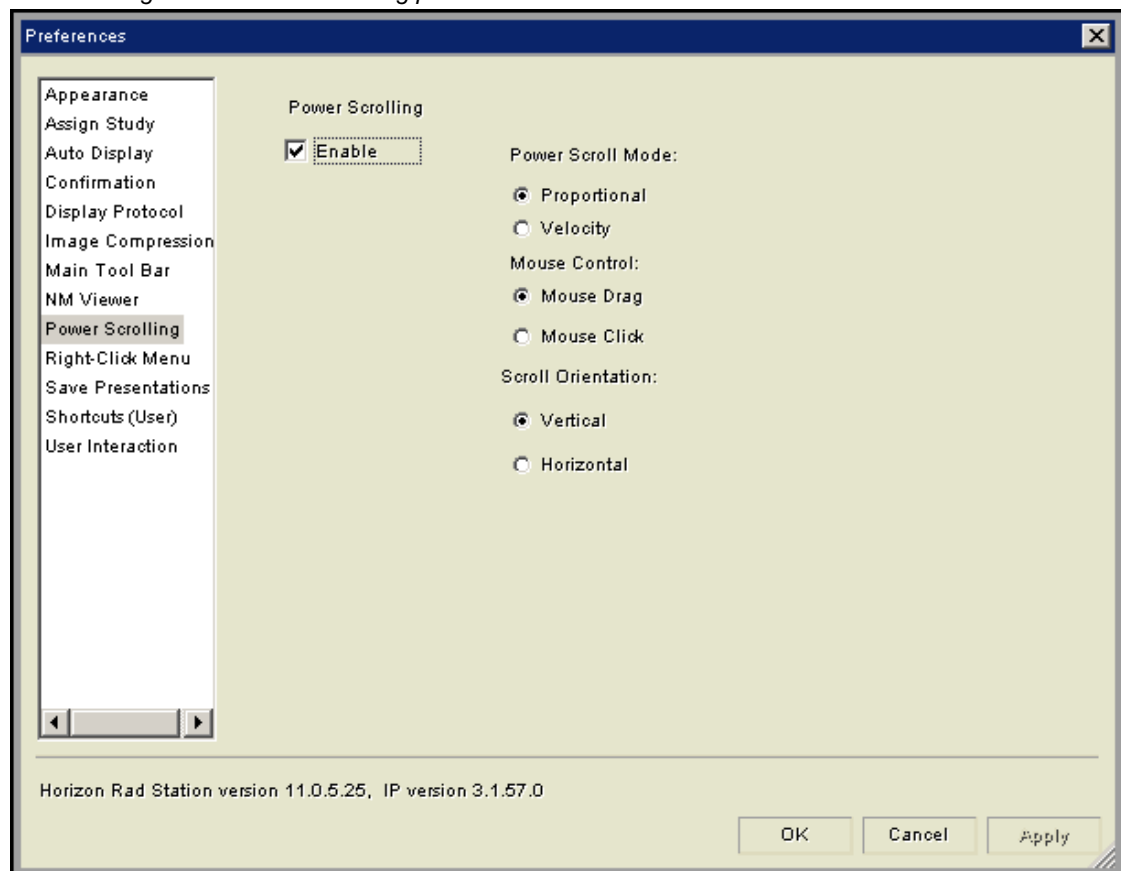


Alternatively, right-click an image, and then select **Preferences**.

The **Preferences** dialog box is displayed.

- 2 Select **Power Scrolling** in the left pane. The **Power Scrolling** preferences are listed on the right.

Figure 9-9 Power Scrolling preferences



- 3 Specify whether to enable Power Scrolling.

If...	Then...
Enabling Power Scrolling	Select the <b>Enable</b> check box.
Disabling Power Scrolling	Clear the <b>Enable</b> check box.

- 4 If Power Scrolling is enabled, set the **Power Scroll Mode**, which specifies how the scrolling speed is determined:

If...	Then...
Scrolling speed depends on how fast you move the mouse	Click <b>Proportional</b> .
Scrolling speed depends on the location of the mouser pointer	Click <b>Velocity</b> .

- 5 If Power Scrolling is enabled, set the **Mouse Control**, which specifies how to start Power Scrolling:

If...	Then...
Starting Power Scrolling by holding down the mouse wheel or middle mouse button	Click <b>Mouse Drag</b> .
Starting Power Scrolling by clicking the mouse wheel or middle mouse button	Click <b>Mouse Click</b> .

- 6 If Power Scrolling is enabled, set the **Scroll Orientation**, which specifies the Power Scroll direction:

If...	Then...
Scrolling by moving the mouse up and down	Click <b>Vertical</b> .
Scrolling by moving the mouse left and right	Click <b>Horizontal</b> .

- 7 Do one of the following:
- To apply the preferences, click **Apply**.
  - To apply the preferences and close the **Preferences** dialog box, click **OK**.

## Right-click menu preferences

Right-click menu preferences specify which menu options are included on the image right-click menu. The image right-click menu is displayed by right-clicking an image.

### Default site settings

The default image right-click menu contains the following options, in the listed order:

- **Select**
- **Annotate**
- **Window/Level**
- **Zoom**
- **Pan**
- **Flag**
- **Preferences**

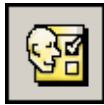
### Customizing the image right-click menu

You can:

- Add or remove menu options
- Rearrange the order of the menu options
- Reset the right-click menu preferences to the default site settings

To customize the image right-click menu:

- 1 Click the **Preferences** icon on the main toolbar.



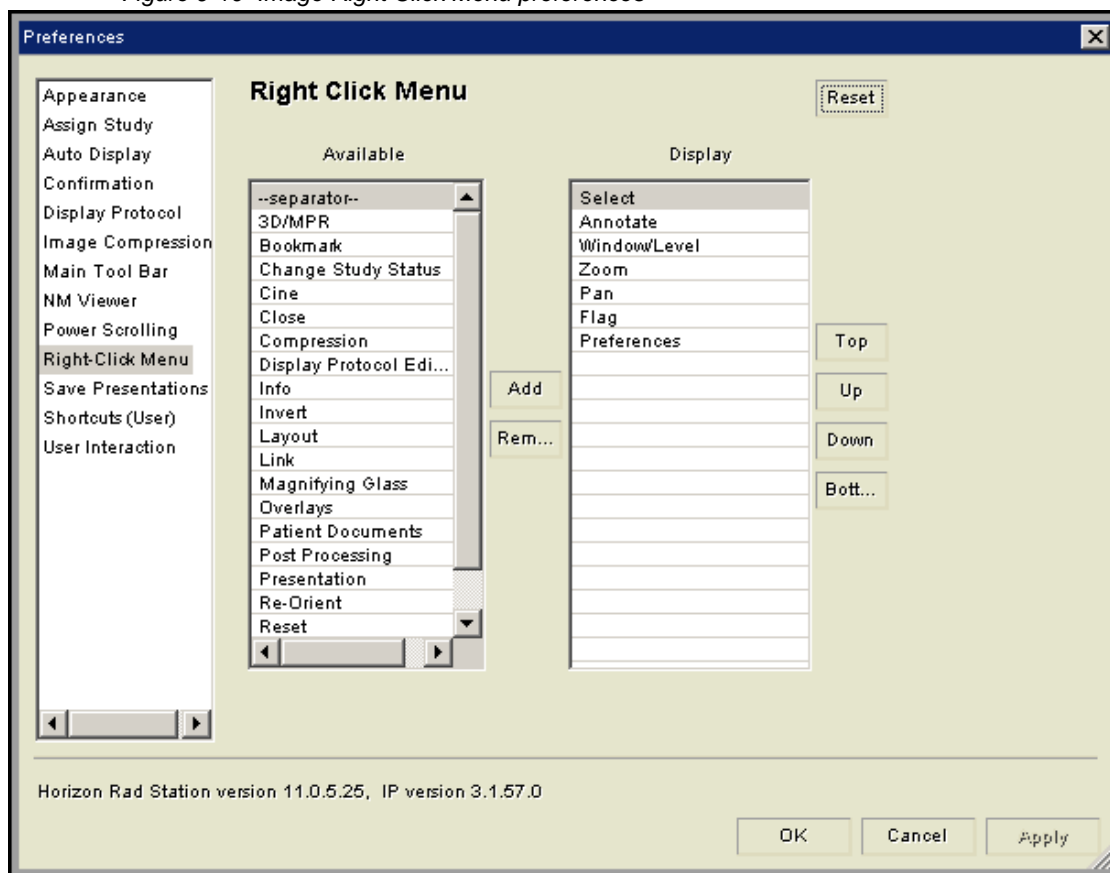
Alternatively, right-click an image, and then select **Preferences**.

The **Preferences** dialog box is displayed.

- 2 Click **Right-Click Menu** in the left pane.

The **Right Click Menu** preferences are listed on the right. The **Display** list shows the current right-click menu preferences.

Figure 9-10 Image Right Click Menu preferences



3 To add or remove menu options:

If...	Then...
Adding menu options	From the <b>Available</b> list, select the menu options, and then click <b>Add</b> .  The menu options are moved to the bottom of the <b>Display</b> list.
Removing menu options	From the <b>Display</b> list, select the menu options, and then click <b>Remove</b> .  The menu options are moved to the <b>Available</b> list.  <b>Note:</b> At least one menu option must remain in the <b>Display</b> list.

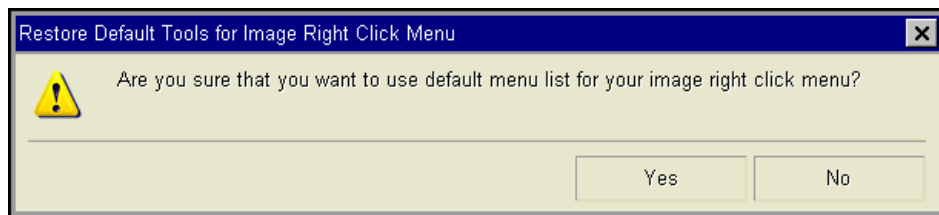
- 4 To rearrange the order of the menu options:

If...	Then...
Moving a menu option up or down	From the <b>Display</b> list, select the menu option, and then click <b>Up</b> or <b>Down</b> .
Moving a menu option to the top or bottom of the image right-click menu	From the <b>Display</b> list, select the menu option, and then click <b>Top</b> or <b>Bottom</b> .

**Note:** Alternatively, you can **drag** the menu options up and down the **Display** list.

- 5 To reset the preferences to the default site settings, do the following:

- Click **Reset**.
- A confirmation message is displayed. Click **Yes**.



- 6 Do one of the following:

- To apply the preferences, click **Apply**.
- To apply the preferences and close the **Preferences** dialog box, click **OK**.



## User shortcuts

This section describes how to work with shortcuts for your personal use.

### In this section

This section contains the following topics:

Topic	See Page
<a href="#">Adding and modifying user shortcuts</a>	304
<a href="#">Removing user shortcuts</a>	308
<a href="#">Copying shortcuts from another user</a>	309
<a href="#">Restoring user shortcuts</a>	311

### Adding and modifying user shortcuts

Shortcuts enable you to perform tasks quickly. They eliminate the need to click an icon, select a menu option, or carry out a series of steps.

You can define shortcuts or modify shortcuts for your personal use. For a list of tasks that can be performed using shortcuts, see [“Available shortcuts”](#) on page 361.

### Restrictions for adding and modifying user shortcuts

The following restrictions exist:

- Some Windows® shortcuts are reserved and cannot be assigned to a command. For details, see [“Reserved Windows® shortcuts”](#) on page 373.
- Some shortcuts are view-only and cannot be modified.

## Keyboard and mouse shortcuts

The following table describes the two types of shortcuts in Horizon Rad Station.

Shortcut type	Meaning
Keyboard	<p>A keyboard shortcut can be one of the following:</p> <ul style="list-style-type: none"> <li>• A key on the keyboard: <ul style="list-style-type: none"> <li>- A character, for example, a letter, number, or symbol</li> <li>- A function key, for example, F2</li> <li>- A navigation key, for example, UP arrow key</li> </ul> </li> <li>• One or more modifier key (CTRL, ALT, SHIFT) in conjunction with a key on the keyboard.</li> </ul>
Mouse	<p>A mouse shortcut can be one of the following:</p> <ul style="list-style-type: none"> <li>• A mouse action: <ul style="list-style-type: none"> <li>- Mouse click</li> <li>- Mouse drag</li> <li>- Wheel scroll</li> </ul> </li> <li>• One or more modifier keys (CTRL, ALT, SHIFT) in conjunction with a mouse action.</li> </ul>

A command can have one keyboard shortcut and/or one mouse shortcut. Commands represent tasks to which shortcuts can be assigned.

## Adding a user shortcut

To add a user shortcut:

- 1 Click the **Preferences** icon on the main toolbar.

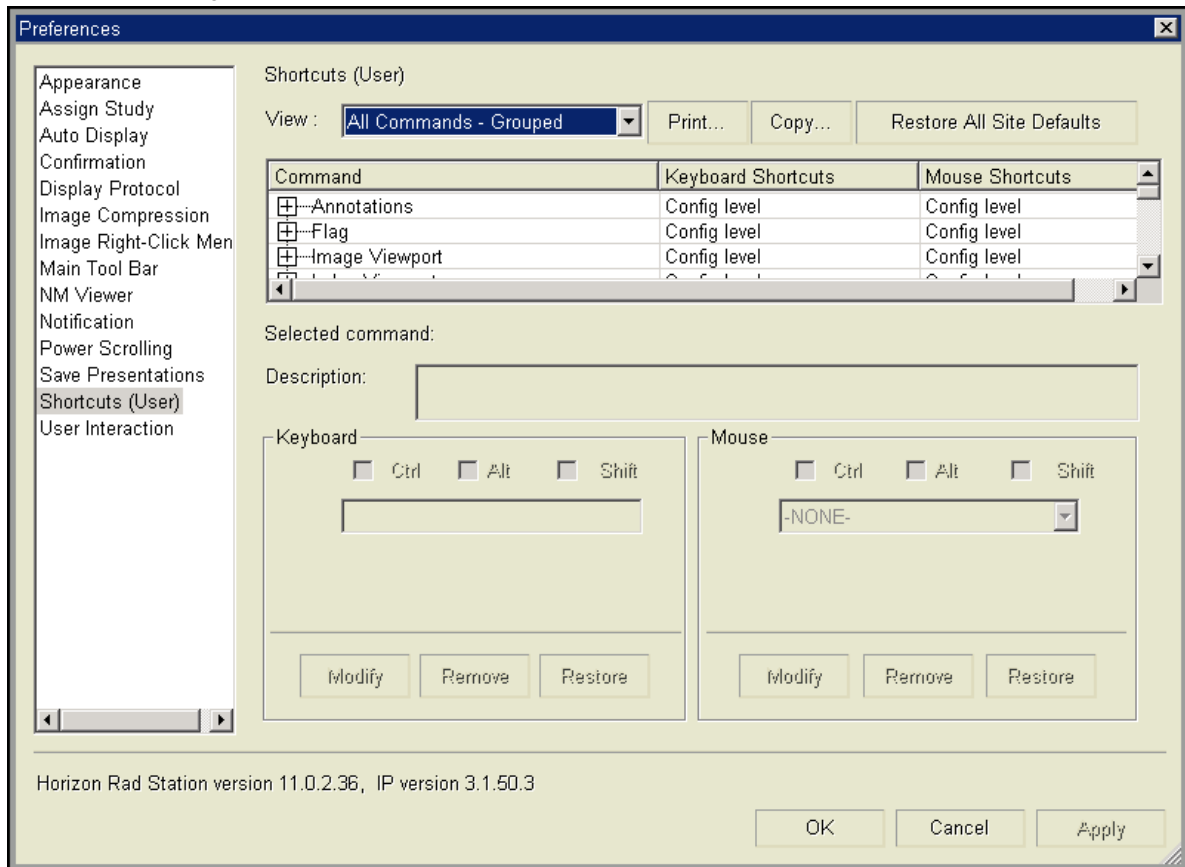


Alternatively, right-click an image, and then select **Preferences**.

The **Preferences** dialog box is displayed.

- 2 Select **Shortcuts (User)** in the left pane. The user shortcuts are displayed on the right.

Figure 9-11 User shortcuts



3 List the commands in one of the following ways:

If...	Then...
Listing commands belonging to a particular category only	1 Click the <b>View</b> box, and then select <b>All Commands - Grouped</b> . The command categories are listed. See <i>Figure 9-12</i> . 2 Expand the category of your interest, by clicking the plus (+) sign beside it.
Listing all the commands	Click the <b>View</b> box, and then select <b>All Commands - List</b> .
Listing the basic commands only	Click the <b>View</b> box, and then select <b>Basic Commands</b> . <hr/> <b>Note:</b> Basic commands are pre-configured for your site.

Figure 9-12 The command categories are listed

Command	Keyboard Shortcuts	Mouse Shortcuts
<input type="checkbox"/> Annotations		
<input type="checkbox"/> Flag		
<input type="checkbox"/> Image Viewport		
<input type="checkbox"/> Index Viewport		
<input type="checkbox"/> Layout		

- 4 Click the command to which you want to assign a user shortcut.  
Description of the selected command, if available, is displayed.
- 5 Define a keyboard shortcut and/or mouse shortcut for the command:

If...	Then...
Defining a keyboard shortcut	<ol style="list-style-type: none"> <li>1 Under <b>Keyboard</b>, enter the shortcut key in the box below the check boxes.</li> <li>2 If necessary, specify the modifier keys, by selecting the <b>Ctrl</b>, <b>Alt</b>, and/or <b>Shift</b> check boxes.</li> <li>3 Click <b>Modify</b>.</li> </ol>
Defining a mouse shortcut	<ol style="list-style-type: none"> <li>1 Under <b>Mouse</b>, click the box below the check boxes, and then specify the mouse action for the shortcut. The available options differ for different commands.</li> <li>2 If necessary, specify the modifier keys, by selecting the <b>Ctrl</b>, <b>Alt</b>, and/or <b>Shift</b> check boxes.</li> <li>3 Click <b>Modify</b>.</li> </ol>

**Note:**

- A shortcut cannot be assigned to more than one command. If the **Modify Shortcut Conflict** message is displayed, see [“Troubleshooting shortcuts”](#) on page 383.
- Some commands may not support a keyboard shortcut or mouse shortcut.

- 6 Do one of the following:
  - To apply the preferences, click **Apply**.
  - To apply the preferences and close the **Preferences** dialog box, click **OK**.

## Modifying a user shortcut

To modify a user shortcut:

- 1 Follow steps 1-3 in “Adding a user shortcut” on page 305.
- 2 Click the command whose shortcut you want to modify. Description of the selected command, if available, is displayed.
- 3 Modify the keyboard shortcut and/or mouse shortcut as follows:

If...	Then...
Modifying a keyboard shortcut	<ol style="list-style-type: none"> <li>1 Under <b>Keyboard</b>, specify a different shortcut key and/or modifier key.</li> <li>2 Click <b>Modify</b>. This button is dimmed if the shortcut is view-only.</li> </ol>
Modifying a mouse shortcut	<ol style="list-style-type: none"> <li>1 Under <b>Mouse</b>, specify a different mouse action, and/or modifier key.</li> <li>2 Click <b>Modify</b>. This button is dimmed if the shortcut is view-only.</li> </ol>

**Note:**

- A shortcut cannot be assigned to more than one command. If the **Modify Shortcut Conflict** message is displayed, see “Troubleshooting shortcuts” on page 383.
- Some commands may not support a keyboard shortcut or mouse shortcut.

- 4 Do one of the following:
  - To apply the preferences, click **Apply**.
  - To apply the preferences and close the **Preferences** dialog box, click **OK**.

## Removing user shortcuts

You can remove your user [shortcuts](#).

**Note:** Removing user shortcuts specifies that no shortcut is used for the corresponding commands. As a result, even if the site shortcuts for the commands exist, you cannot use the site shortcuts to perform the tasks.

## Restriction for removing user shortcuts

Some shortcuts are view-only and cannot be removed.

### Steps for this task

To remove a user shortcut:

- 1 Follow steps 1-3 in “Adding a user shortcut” on page 305.
- 2 Click the command whose shortcut you want to remove. Description of the selected command, if available, is displayed.
- 3 Remove the keyboard and/or mouse shortcut as follows:

If...	Then...
Removing a keyboard shortcut	Under <b>Keyboard</b> , click <b>Remove</b> .
Removing a mouse shortcut	Under <b>Mouse</b> , click <b>Remove</b> .

**Note:** The **Remove** button is dimmed if the shortcut is view-only.

- 4 Do one of the following:
  - To apply the preferences, click **Apply**.
  - To apply the preferences and close the **Preferences** dialog box, click **OK**.

### Copying shortcuts from another user

If **shortcuts** are copied from another Horizon Rad Station user, all of your user shortcuts are replaced. You can preview the user's shortcuts before copying them.

### Steps for this task

To copy shortcuts from another user:

- 1 Follow steps 1-2 in “Adding a user shortcut” on page 305.
- 2 Click **Copy**.

The **Copy Shortcuts** dialog box is displayed.

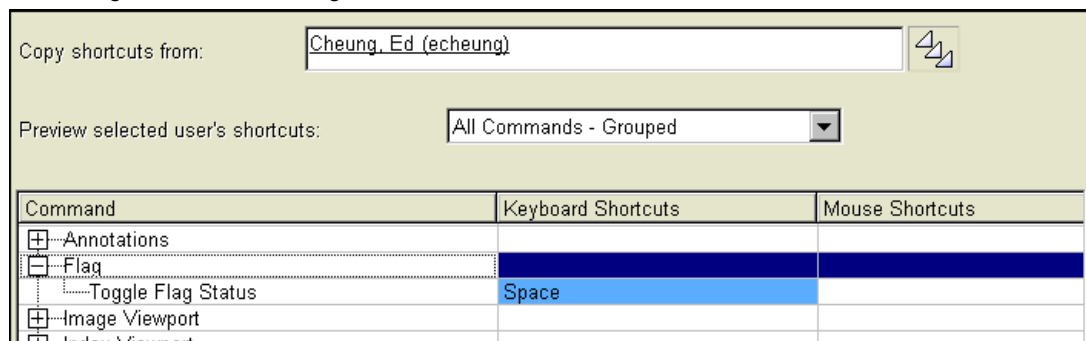


- 4 Click the **Preview selected user's shortcuts** box, and then specify how to list the user's shortcuts:

If...	Then...
Listing shortcuts belonging to a particular category only	<ol style="list-style-type: none"> <li>1 Select <b>All Commands - Grouped</b> from the menu.  The command categories are listed. See <i>Figure 9-12</i> on page 307.</li> <li>2 Expand the category of your interest, by clicking the plus (+) sign beside it.</li> </ol>
Listing all the shortcuts	Select <b>All Commands - List</b> from the menu.
Listing the basic shortcuts only	Select <b>All Basic Commands</b> from the menu.  <b>Note:</b> Basic commands are pre-configured for your site.

The shortcuts are listed accordingly.

Figure 9-14 Previewing the selected user's shortcuts



- 5 To preview another user's shortcuts, repeat steps 3-4.
- 6 Click **OK**, to copy the user's shortcuts. Your previous shortcuts are now replaced with the copied shortcuts.

## Restoring user shortcuts

You can restore your user **shortcuts**, to match the site default shortcuts. Site default shortcuts are defined by users who have the authority to modify site shortcuts. If there is no site default shortcut for the command, the user shortcut is deleted.

You can restore an individual user shortcut, or all user shortcuts at once.



## Restoring a user shortcut

To restore a user shortcut:

- 1 Follow steps 1-3 in “Adding and modifying user shortcuts” on page 304.
- 2 Click the command whose shortcut you want to restore. Description of the selected command, if available, is displayed.
- 3 Restore the keyboard and/or mouse shortcut as follows:

If...	Then...
Restoring a keyboard shortcut	Under <b>Keyboard</b> , click <b>Restore</b> .
Restoring a mouse shortcut	Under <b>Mouse</b> , click <b>Restore</b> .

**Note:** If the **Restore Shortcut Conflict** message is displayed, see “Troubleshooting shortcuts” on page 383.

- 4 Do one of the following:
  - To apply the preferences, click **Apply**.
  - To apply the preferences and close the **Preferences** dialog box, click **OK**.

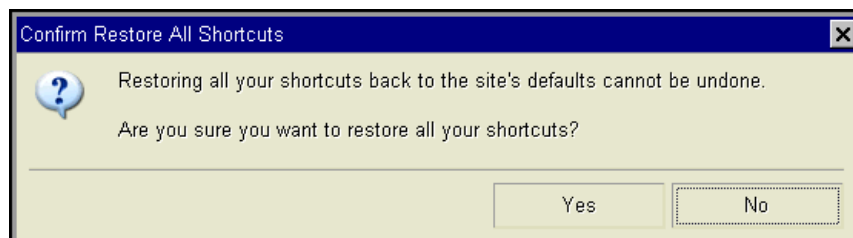
## Restoring all user shortcuts

To restore all of your user shortcuts:

- 1 Follow steps 1-2 in “Adding a user shortcut” on page 305.
- 2 Click **Restore All Site Defaults**.

A confirmation message is displayed.

Figure 9-15 Restore all user shortcuts confirmation message



- 3 Click **Yes** to restore all user shortcuts to site default shortcuts.
  - so that all users at your site can use them.

## User Interaction preferences

User Interaction preferences specify the following properties:

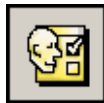
- Mouse behavior
- Whether images are flagged automatically when you add persistent **annotations** (See [“Sharing annotations”](#) on page 163)
- When you click the **Close** icon located at the top left corner of the **work area**, whether the status of the study is changed with one click, or two clicks:
  - With one click, the status is changed to the default configured for your user role
  - With two clicks, you can specify the new status of the study

For details on closing studies using the **Close** icon, see [“Closing a study from the main toolbar”](#) on page 334.

### Steps for this task

To set User Interaction preferences:

- 1 Click the **Preferences** icon on the main toolbar.

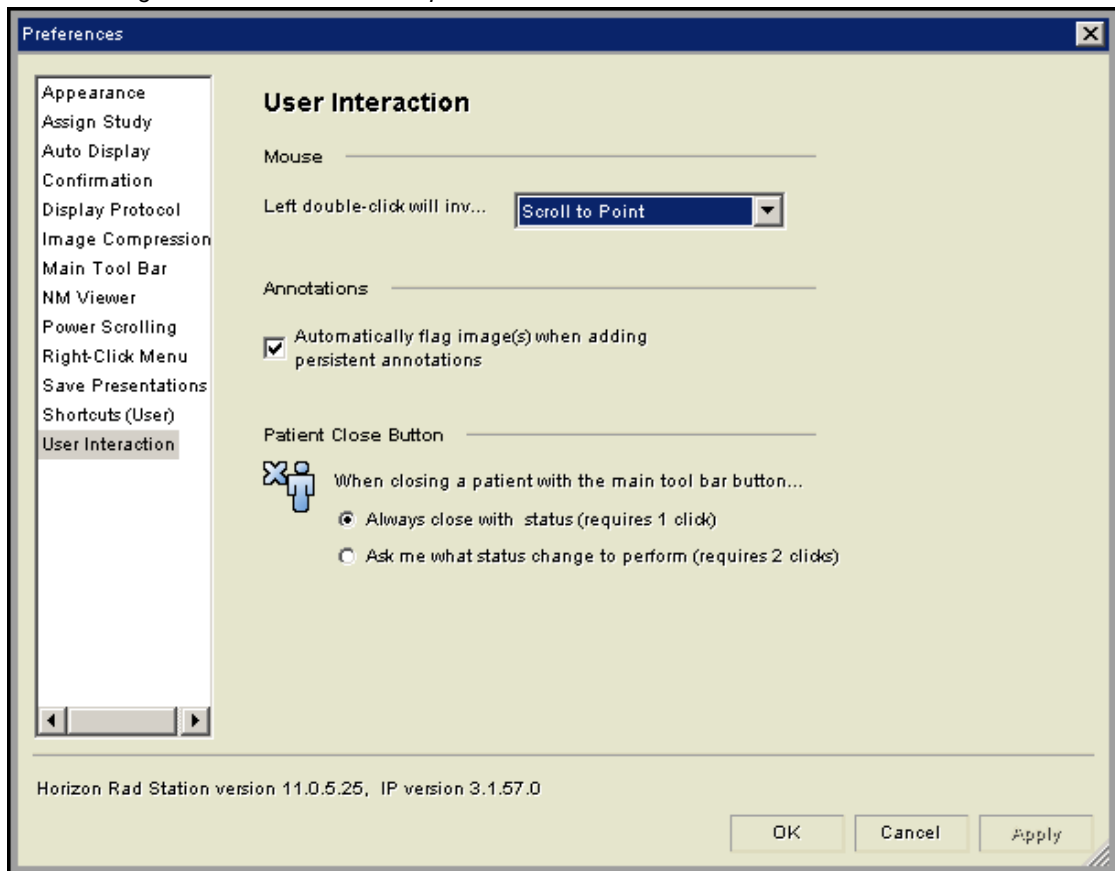


Alternatively, right-click an image, and then select **Preferences**.

The **Preferences** dialog box is displayed.

- 2 Select the **User Interaction section** in the left pane. The **User Interaction** preferences are listed on the right.

Figure 9-16 User Interaction preferences



- 3 Click the box **Left double-click will invoke**, and then select an option to specify the mouse behavior:

To...	Choose this option...
Start Scroll to Point with a double-click	Select <b>Scroll to Point</b> . Scroll to Point identifies specific points of interest in images. See “ <a href="#">Scrolling other linked series to a defined point</a> ” on page 71.
Display a <a href="#">Zoom window</a> by double-clicking the <a href="#">viewport</a>	Select <b>Open in Zoom Window</b> . For details, see “ <a href="#">Zoom window and Survey window</a> ” on page 46.
Not start anything with a double-click	Select <b>Nothing</b> .

- 4 Specify whether to change the study status with one click or two clicks:

If...	Then...
You want to change the status with one click	Click <b>Always close with &lt;default&gt; status (requires 1 click)</b> .

<b>If...</b>	<b>Then...</b>
You want to change the status with two clicks	Click <b>Ask me what status change to perform (requires 2 clicks)</b> .



## Chapter 10 - Changing study status and closing studies

This section describes how to change the study status and close studies.

### In this section

This section contains the following topics:

Topic	See Page
Changing study status of open studies	318
Closing studies	330

---

## Changing study status of open studies

This section describes how to change the status of open studies. The study status denotes where a study is within your workflow.

---

**Note:** If Horizon Rad Station is accessed from an [EMR application](#), the study status cannot be changed

---

### In this section

This section contains the following topics:

Topic	See Page
<a href="#">Changing the study status to Performed</a>	319
<a href="#">Changing the study status to Reviewed or Needs Over-Read</a>	319
<a href="#">Changing the study status to Dictated or Reported</a>	323
<a href="#">Changing the study status to Transcribed</a>	328
<a href="#">Changing the study status to match the status of the anchor study</a>	328

## Changing the study status to Performed

If the **study status** is changed mistakenly, you can change it back to **Performed**.

### Restrictions for changing the study status to Performed

The following restrictions exist:

- You can change the study status to Performed for the **anchor study** only.
- You must have the authority to mark the study as Performed. For details, contact your system administrator.

### Steps for this task

To change the study status to Performed:

- 1 Click the **Change** icon on the main toolbar.



---

**Note:** If this is a **reference study**, clicking the **Change** icon changes the status of the anchor study instead.

---

- 2 From the menu that is displayed, select **Change Study Status to Performed**.

Alternatively, instead of steps 1-2, do one of the following:

- Right-click an image and point to **Change Study Status**, and then select **Change Status to Performed**.
- Use your own **shortcut** to change the status to Performed. To set up a shortcut, see “**Adding and modifying user shortcuts**” on page 304.

---

**Note:** If the **Unable to change study status message** is displayed, see “**Troubleshooting study status modification**” on page 385.

---

## Changing the study status to Reviewed or Needs Over-Read

A **study status** can be changed to:

- **Reviewed**, after its image quality has been examined
- **Needs Over-Read**, after a preliminary **diagnosis** has been made

When you change a study status to Reviewed or Needs Over-Read, you need to assign the study to any Horizon Medical Imaging™ user, or a particular authorized user. The study is listed in the assigned user’s **Study list**.

If the study whose status you want to change is the **anchor study**, you may also change the status of the **grouped studies** and/or **reference studies**, to match that of the anchor study.



## Restriction for changing the study status to Reviewed or Needs Over-Read

You must have the authority to mark the study as Reviewed or Needs Over-Read. For details, contact your system administrator.

### Steps for this task

To change the study status to Reviewed or Needs Over-Read:

- 1 Click the **Change** icon on the main toolbar.



---

**Note:** If this is a reference study, clicking the **Change** icon changes the status of the anchor study instead.

---

- 2 From the menu that is displayed, select **Change Study Status to Reviewed** or **Change Study Status to Needs Over-Read**.

Alternatively, instead of steps 1-2, do one of the following:

- Right-click an image and point to **Change Study Status**, and then select **Change Status to Reviewed** or **Change Study Status to Needs Over-Read**.
- Use your own **shortcut** to change to study status to Reviewed or Needs Over-Read. To set up a shortcut, see “[Adding and modifying user shortcuts](#)” on page 304.

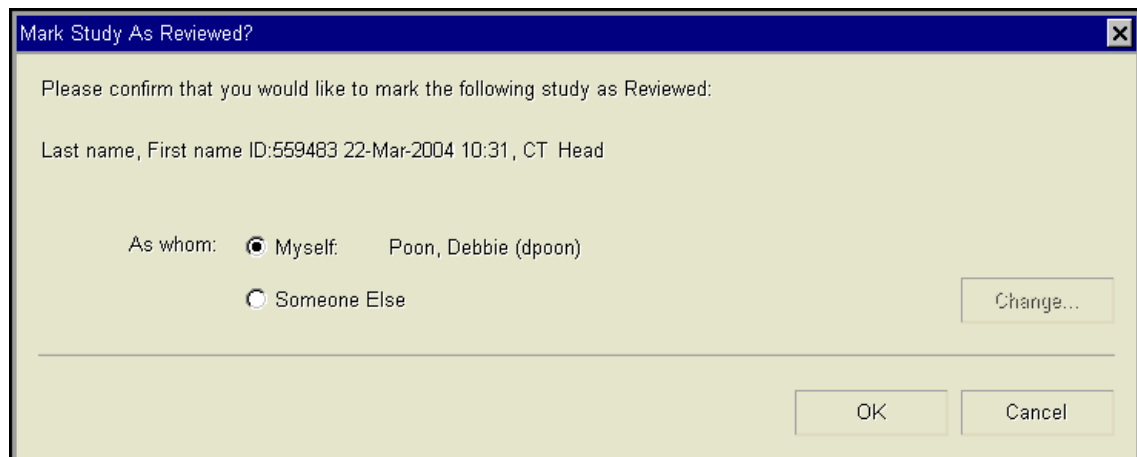
---

**Note:** If the **Unable to change study status message** is displayed, see “[Troubleshooting study status modification](#)” on page 385.

---

The **Mark Study As** dialog box is displayed.

Figure 10-1 Mark Study As dialog box



## 3 Specify yourself as the user who changes the status:

If...	Then...
You are the logged-on user	Click <b>As Myself</b> . Note that your name is displayed.
Another user is the logged-on user	<ol style="list-style-type: none"> <li>1 Click <b>As Someone Else</b>.</li> <li>2 If your name is not displayed, do the following: <ul style="list-style-type: none"> <li>• Click <b>Change</b>.</li> </ul> <p>The <b>Confirm Identity for Status Change to</b> dialog box is displayed. See <i>Figure 10-2</i>. Depending on your site configuration, the <b>Password</b> box may not exist.</p> <ul style="list-style-type: none"> <li>• Enter your <b>User Name</b>.</li> <li>• If the <b>Password</b> box exists, enter your password. The password is case sensitive.</li> <li>• Click <b>OK</b>.</li> </ul> </li> </ol>

Figure 10-2 Confirm Identity for Status Change to dialog box

- 4 Click **OK**. The **Mark Study As** dialog box is closed.
- 5 If the **Confirm Identity for Status Change to** dialog box (*Figure 10-2*) is displayed, confirm the identity as follows:
  - Enter the **User Name**.
  - If the **Password** box exists, enter the password. The password is case sensitive.
  - Click **OK**.

---

**Note:** If you have already entered the user name and password in step 3, the **Confirm Identity for Status Change to** dialog box is not displayed.

---

6 If the **Assign Study** dialog box (*Figure 10-3*) is displayed, assign the study as follows:


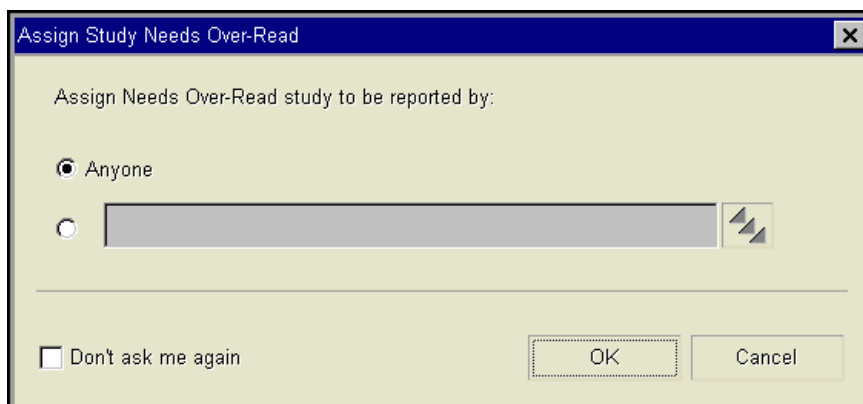
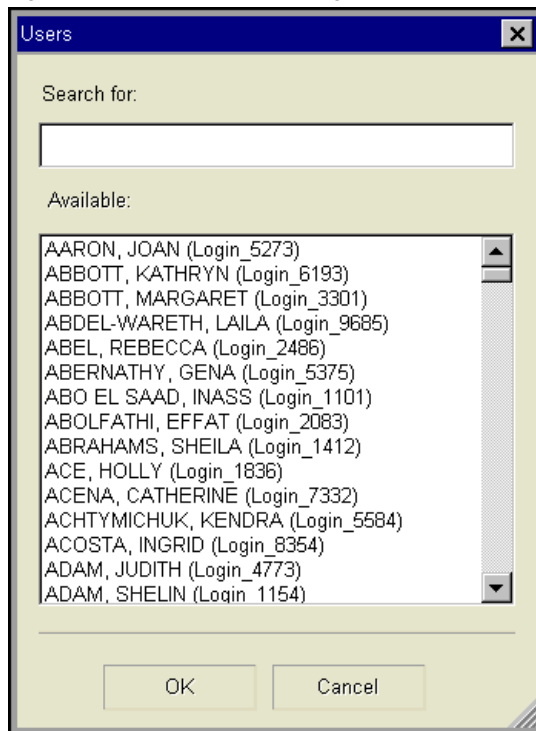
If...	Then...
Assigning the study to any Horizon Medical Imaging™ user	<ol style="list-style-type: none"> <li>1 Click <b>Anyone</b>.</li> <li>2 Click <b>OK</b>.</li> </ol>
Assigning the study to a particular authorized user	<ol style="list-style-type: none"> <li>1 Click the second option.</li> <li>2 Click the <b>picker</b> at the end of the text box.  </li> <li>3 In the <b>Available</b> list, click the user to whom you want to assign the study. You can also find the user, by typing the name in the <b>Search for</b> box. The matching user is automatically selected in the list.</li> <li>4 Click <b>OK</b>, to close the <b>Users</b> picker dialog box.</li> <li>5 Click <b>OK</b>.</li> </ol>

Figure 10-3 Assign Study dialog box



**Note:** The **Assign Study** dialog box is displayed if you have configured Horizon Rad Station to display it. See “Confirmation preferences” on page 291. If the dialog box is not displayed, the study is assigned according to the Assign Study preferences (See “Assign Study preferences” on page 287).

Figure 10-4 Users picker dialog box



- 7 If the **Change Reference Study Status** dialog box is displayed, see [“Changing the study status to match the status of the anchor study”](#) on page 328.

## Changing the study status to Dictated or Reported

A [study status](#) can be changed to:

- [Dictated](#), after an audio version of a diagnosis has been made. A diagnosis is a brief summary of a patient’s condition after the images are interpreted.
- [Reported](#), after a complete diagnosis has been made or a preliminary diagnosis has been verified.

If the study whose status you want to change is the [anchor study](#), you may also change the status of the [grouped studies](#) and/or [reference studies](#), to match that of the anchor study.

### Restriction for changing the study status to Dictated or Reported

You must have the authority to mark the study as Dictated or Reported. For details, contact your system administrator.

## Steps for this task

To change the study status to Dictated or Reported:

- 1 Click the **Change** icon on the main toolbar.



---

**Note:** If this is a reference study, clicking the **Change** icon changes the status of the anchor study instead.

---

- 2 From the menu that is displayed, select **Change Study Status to Dictated** or **Change Study Status to Reported**.

Alternatively, instead of steps 1-2, do one of the following:

- Right-click an image and point to **Change Study Status**, and then select **Change Status to Dictated** or **Change Study Status to Reported**.

---

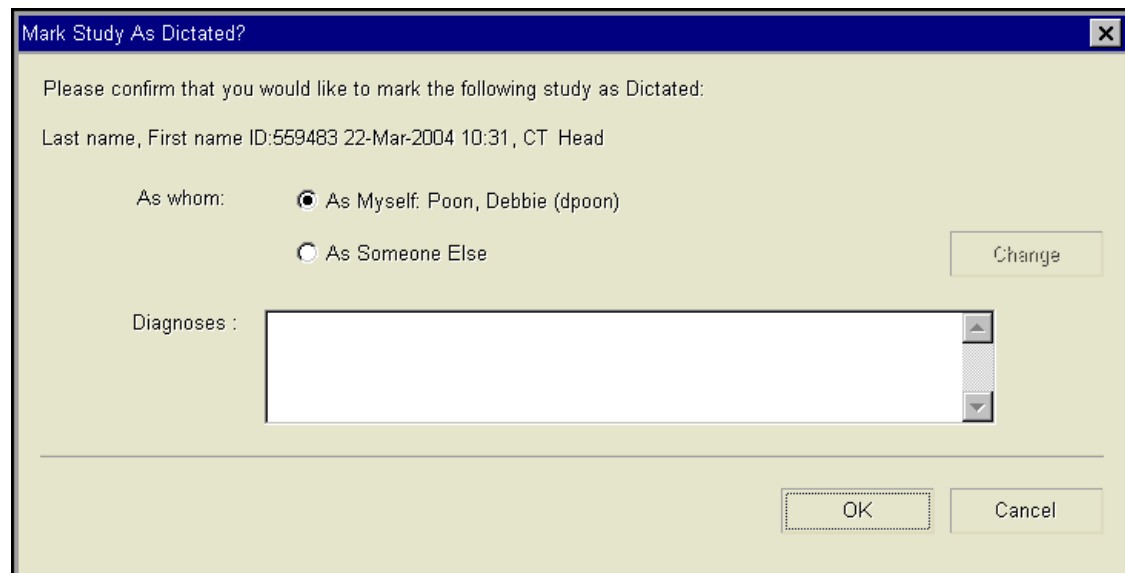
**Note:** Whether the **Change Study Status** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

---

- Use your own [shortcut](#) to change the study status to Dictated or Reported. To set up a shortcut, see “[Adding and modifying user shortcuts](#)” on page 304.

The **Mark Study As** dialog box is displayed.

Figure 10-5 Mark Study As dialog box



**Note:** Depending on whether diagnoses are required at your site, the **Mark Study As** dialog box may be different:

- If diagnoses are entered as text, the **Diagnosis** box is displayed.
- If diagnoses are selected from a list of predefined diagnoses, the **Diagnosis** box is displayed with a **picker** at the end. The list of diagnoses is created in **PACS Admin** and can be modified. For details, refer to the Horizon Medical Imaging™ *Administrator's Guide*, or the Online Help within PACS Admin.
- If no diagnoses are required, the **Diagnosis** box is not displayed.

- 3 Specify yourself as the reporting physician, who marks the study as Dictated or Reported.

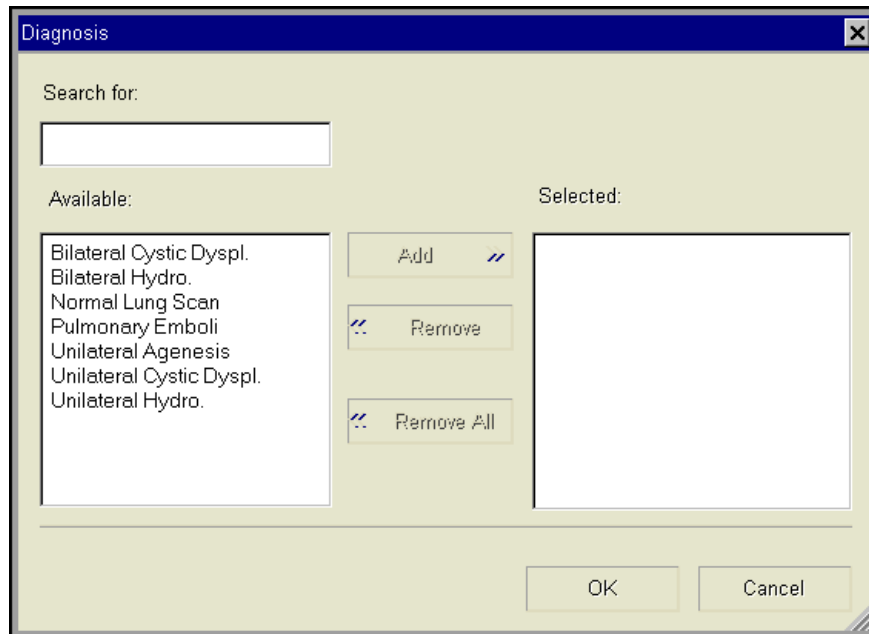
If...	Then...
You are the logged-on user	<p>Click <b>As Myself</b>. Note that your name is displayed.</p> <hr/> <p><b>Note:</b> If you do not have the authority to change the study status to Dictated or Reported, the <b>As Myself</b> option is dimmed. If the <b>Non-physician</b> option is available, you can change the study status using the non-physician identity. As a result, your name is not displayed as the Reporting Physician.</p> <hr/>
Another user is the logged-on user	<ol style="list-style-type: none"> <li>1 Click <b>As Someone Else</b>.</li> <li>2 If your name is not displayed, do the following: <ul style="list-style-type: none"> <li>• Click <b>Change</b>.</li> </ul> <p>The <b>Confirm Identity for Status Change to</b> dialog box is displayed. See <i>Figure 10-2</i> on page 321. Depending on your site configuration, the <b>Password</b> box may not exist.</p> <ul style="list-style-type: none"> <li>• Enter your <b>User Name</b>.</li> <li>• If the <b>Password</b> box exists, enter your password. The password is case sensitive.</li> <li>• Click <b>OK</b>.</li> </ul> </li> </ol>

- 4 If the **Diagnoses** box exists, enter the diagnosis.

Alternatively, if the **Diagnoses** box contains a picker, attach the diagnoses as follows:

- Click the picker at the end of the **Diagnoses** box. The **Diagnosis** picker dialog box is displayed.

Figure 10-6 Diagnosis picker dialog box



- In the **Available** list, click the diagnoses. You can also find a diagnosis, by typing it in the **Search For** box. The matching diagnosis is automatically selected in the list.
- Click **Add**. The selected diagnoses are moved to the **Selected** list. To remove a diagnosis from the **Selected** list, select it and click **Remove**.
- Click **OK**. The **Diagnosis** picker dialog box is closed.

**Note:** If you change the study status using the non-physician identity, you cannot attach diagnoses.

- 5 Click **OK**. The **Mark Study As** dialog box is closed.
- 6 If the **Confirm Identity for Status Change to** dialog box (*Figure 10-2* on page 321) is displayed, confirm the identity as follows:
  - Enter the **User Name**.
  - If the **Password** box exists, enter the password. The password is case sensitive.
  - Click **OK**.

**Note:** If you have already entered the user name and password in step 3, the **Confirm Identity for Status Change to** dialog box is not displayed.

- 7 If the **Change Reference Study Status** dialog box is displayed, see “[Changing the study status to match the status of the anchor study](#)” on page 328.

## Changing the study status to Transcribed

A **study status** can be changed to **Transcribed**, after the audio version of a diagnosis has been transcribed. A diagnosis is a brief summary of a patient's condition after the images are interpreted.

### Restrictions for changing the study status to Transcribed

The following restrictions exist:

- You must have the authority to mark the study as Transcribed. For details, contact your system administrator.
- The study status can be changed to Transcribed only if the third-party transcription system at your site can communicate the transcription progress to Horizon Medical Imaging™.

### Steps for this task

To change the study status to Transcribed:

- 1 Click the **Change** icon on the main toolbar.



---

**Note:** If this is a **reference study**, clicking the **Change** icon changes the status of the **anchor study** instead.

---

- 2 From the menu that is displayed, select **Change Study Status to Transcribed**.

Alternatively, instead of steps 1-2, do one of the following:

- Right-click an image and point to **Change Study Status**, and then select **Change Status to Transcribed**.

---

**Note:** Whether the **Change Study Status** option is displayed on the right-click menu depends on your right-click preferences. See "**Main toolbar preferences**" on page 296.

---

- Use your own **shortcut** to change the study status to Transcribed. To set up a shortcut, see "**Adding and modifying user shortcuts**" on page 304.

The **Confirm Identity for Status Change to** dialog box is displayed. See *Figure 10-2* on page 321.



- 3 Confirm your identity as follows:
  - Enter the **User Name**.
  - Enter the **Password**. The password is case sensitive.
  - Click **OK**.

---

**Note:** If the **Unable to change study status** message is displayed, you do not have the authority to change the study status to Transcribed. Click **OK**, and get an authorized user to perform this step.

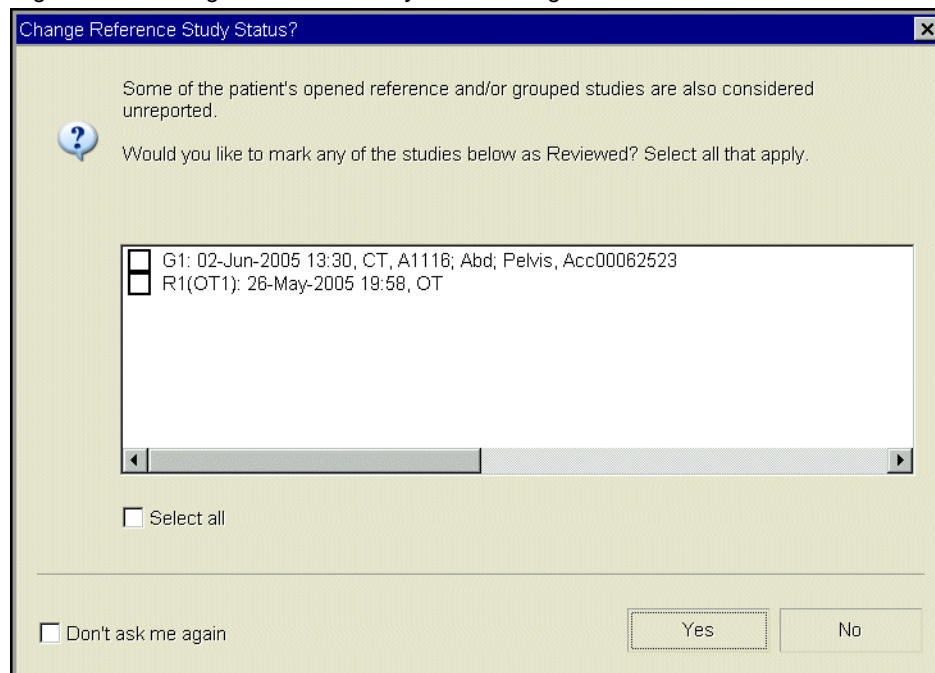
---

## Changing the study status to match the status of the anchor study

When you change the **status** of the **anchor study** to **Needs Over-Read**, **Reviewed**, **Dictated**, or **Reported**, Horizon Rad Station checks for any **unreported grouped studies** and/or **reference studies**.

Depending on the site configuration, Horizon Rad Station may automatically change the status of unreported grouped studies and/or reference studies, to match the new status of the anchor study. You can also configure Horizon Rad Station to display the **Change Reference Study Status** dialog box. The dialog box enables you to specify which grouped studies and/or reference studies whose status you want to change.

Figure 10-7 Change Reference Study Status dialog box



If...	Then...
Changing the status of reference studies and/or grouped studies	<ol style="list-style-type: none"> <li>1 Select the check boxes that correspond to the studies whose status you want to change.  To change status of all reference studies and grouped studies, select the <b>Select all</b> check box.</li> <li>2 Click <b>Yes</b>.</li> </ol> <hr/> <p><b>Note:</b> If the anchor study is closed as Reported and has <b>diagnoses</b> attached to it, the diagnoses are also attached to the reference studies and/or grouped studies.</p>
Not changing the status of reference studies and/or grouped studies	Click <b>No</b> .

For details on displaying or hiding the **Change Reference Study Status** dialog box, see [“Confirmation preferences”](#) on page 291.

## Closing studies

This section describes how to close studies.

### In this section

This section contains the following topics:

Topic	See Page
<a href="#">Overview of closing studies</a>	330
<a href="#">Closing all open studies</a>	330
<a href="#">Closing a study without changing its status</a>	331
<a href="#">Closing a study and changing its status</a>	332
<a href="#">Messages that may be displayed when closing a study</a>	334

## Overview of closing studies

You can close studies in one of the following ways:

- Close all open studies at once (See [“Closing all open studies”](#) on page 330)
- Close studies individually, with or without changing their **status** (See [“Closing a study without changing its status”](#) on page 331 and [“Closing a study and changing its status”](#) on page 332)

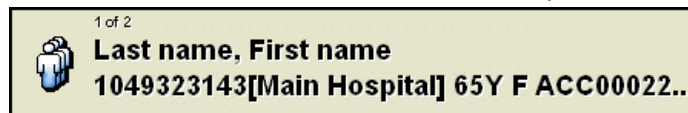
## Closing all open studies

You can quickly close all open studies without changing their **status**. For an overview, see [“Overview of closing studies”](#) on page 330.

### Steps for this task

To close all open studies:

- 1 Click the Patient Identification button at the top of the **work area**.



- 2 From the menu that is displayed, select **Close All Open Patients**.

Alternatively, instead of steps 1-2, do one of the following:

- Click the **Sweep** icon on the main toolbar.



- Right-click an image and select **Sweep**.

---

**Note:** Whether the **Sweep** option is displayed on the right-click menu depends on your right-click preferences. See “[Main toolbar preferences](#)” on page 296.

---

- Use your own [shortcut](#) to close all open studies. To set up a shortcut, see “[Adding and modifying user shortcuts](#)” on page 304.

All open studies are closed.

## Closing a study without changing its status

You can close an open study without changing its [status](#). For an overview, see “[Overview of closing studies](#)” on page 330.

### Steps for this task

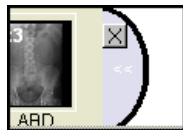
To close a study without changing its status:

- 1 Do one of the following:

- Click the arrow beside the **Close** icon. The icon is located at the top left corner of the [work area](#). If there is no arrow beside the icon, click the icon.



- Click the close (x) button on the thumbnail toolbar.



- Click the **Close Study** icon on the Study toolbar.



- 2 From the menu that is displayed, select **Close Study**.

Alternatively, instead of steps 1-2, do one of the following:

- Right-click a thumbnail image, and then select **Close Study**.
- Use your own [shortcut](#) to close the study. To set up a shortcut, see “[Adding and modifying user shortcuts](#)” on page 304.

The study is closed. If the study is the anchor study, all reference studies are also closed.

---

## Closing a study and changing its status

You can close an open study and change its **status**. For an overview, see “[Overview of closing studies](#)” on page 330.

If the study is the **anchor study**, all open **grouped studies** and/or **reference studies** are also closed. In addition, if you change the status of the anchor study, you may also change the status of the grouped studies and/or reference studies, to match that of the anchor study.

---

**Note:** If Horizon Rad Station is accessed from an **EMR application**, the study status cannot be changed

---

### Restrictions for closing a study and changing its status

The following restrictions exist:

- You must have the authority to close the studies as the status of your choice. For details, contact your system administrator.
- Studies cannot be closed as **Performed** or **Transcribed**; however, you can change the study status to **Performed** or **Transcribed**. See “[Changing the study status to Performed](#)” on page 319 and “[Changing the study status to Transcribed](#)” on page 327.

### Steps for this task

To close a study and change its status:

1 Do one of the following:

- Click the close (x) button on the Thumbnail toolbar.



- Click the **Close Study** icon on the Study toolbar.



2 From the menu that is displayed, select one of following options:

- **Close Study as Reported**
- **Close Study as Dictated**
- **Close Study as Reviewed**
- **Close Study as Needs Over-Read**

---

**Note:** Depending on the study status and your user role, some options may not be available.

---

Alternatively, instead of steps 1-2, do one of the following:

- Use the **Close** icon, located at the top left corner of the **work area**. See “Closing a study from the main toolbar” on page 334.



- Right-click a thumbnail image, and then select the option.
- Right-click an image, and then select the option.
- Use your own **shortcuts** to close the study as the status of your choice. To set up shortcuts, see “Adding and modifying user shortcuts” on page 304.

3 Do one of the following:

If...	Then...
Changing the status to <b>Needs Over-Read</b> or <b>Reviewed</b>	The <b>Mark Study As</b> dialog box ( <i>Figure 10-1</i> on page 320) is displayed.  Follow steps 3-6 of “Changing the study status to <b>Reviewed</b> or <b>Needs Over-Read</b> ” on page 319.
Changing the status to <b>Dictated</b> or <b>Reported</b>	The <b>Mark Study As</b> dialog box ( <i>Figure 10-5</i> on page 324) is displayed.  Follow steps 3-6 of “Changing the study status to <b>Dictated</b> or <b>Reported</b> ” on page 323.  <b>Note:</b> In step 3 of “Changing the study status to <b>Dictated</b> or <b>Reported</b> ” on page 323, you can select the <b>Non-physician</b> option instead of specifying your own name as the Reporting physician. If you select this option, you cannot close a study and change its status at the same time.

4 If the **Change Reference Study Status** dialog box is displayed, see “Changing the study status to match the status of the anchor study” on page 328.

The study is closed. If the study is the anchor study, all open grouped studies and/or reference studies are also closed.

## Closing a study from the main toolbar

The **Close** icon enables you to close a study and change its status. The icon is located on the main toolbar, at the top left corner of the **work area**.



Depending on your user preferences, you can change the study status with one click or two clicks:

- With one click, the status is changed to the default status configured for your user role
- With two clicks, you can specify the new study status

For details, see “[User Interaction preferences](#)” on page 313.

To close a study from the main toolbar:

- 1 Click the **Close** icon, located at the top left corner of the **work area**.

---

**Note:** If this is a reference study, do not click the **Close** icon. Clicking this icon closes the **anchor study** and all the **reference studies** instead.

---

- 2 If a menu is displayed, select the option of your choice.

---

**Note:** If there is an arrow beside the **Close** icon, clicking the arrow also displays the menu.

---

- 3 Follow steps 3-4 of “[Closing a study and changing its status](#)” on page 332, to continue to close the study.

## Messages that may be displayed when closing a study

When you **close a study**, some messages may be displayed to alert of a specific condition, or ask you to confirm an action:

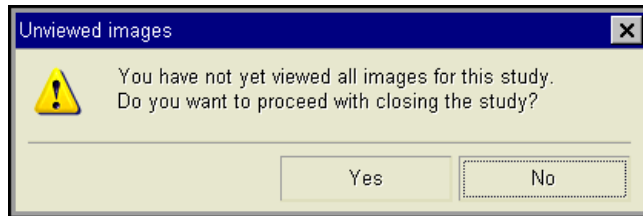
- “[Not all images have been viewed](#)” on page 334
- “[Closing studies before all images have been loaded](#)” on page 335

### Not all images have been viewed

Horizon Rad Station can be configured to display the **Unviewed Images** message when:

- You close a study as **Needs Over-Read**, **Reviewed**, **Dictated**, or **Reported**, and
- Some images in the study have not been viewed

Figure 10-8 Unviewed Images message



Click **Yes** to proceed, or **No** to cancel closing the study.

---

**Note:** If you close the **anchor study** and change its status, Horizon Rad Station checks for unviewed images in the **anchor study** and unreported **reference studies**.

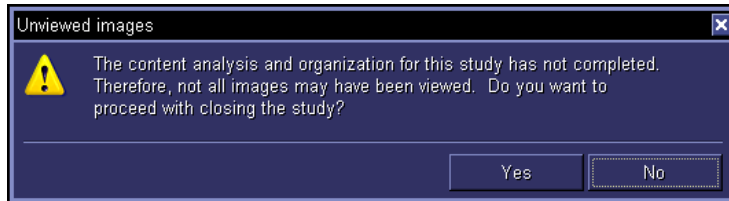
---

### Closing studies before all images have been loaded

Horizon Rad Station will display the **Unviewed Images** message when:

- You close an anchor study as **Needs Over-Read**, **Reviewed**, **Dictated**, or **Reported**, while the study is being loaded and before you have viewed all the images

Figure 10-9 Unviewed Images message



Click **Yes** to proceed, or **No** to cancel closing the study.





## Appendix A - Horizon Rad Station work area

This section describes the Horizon Rad Station work area.

### In this section

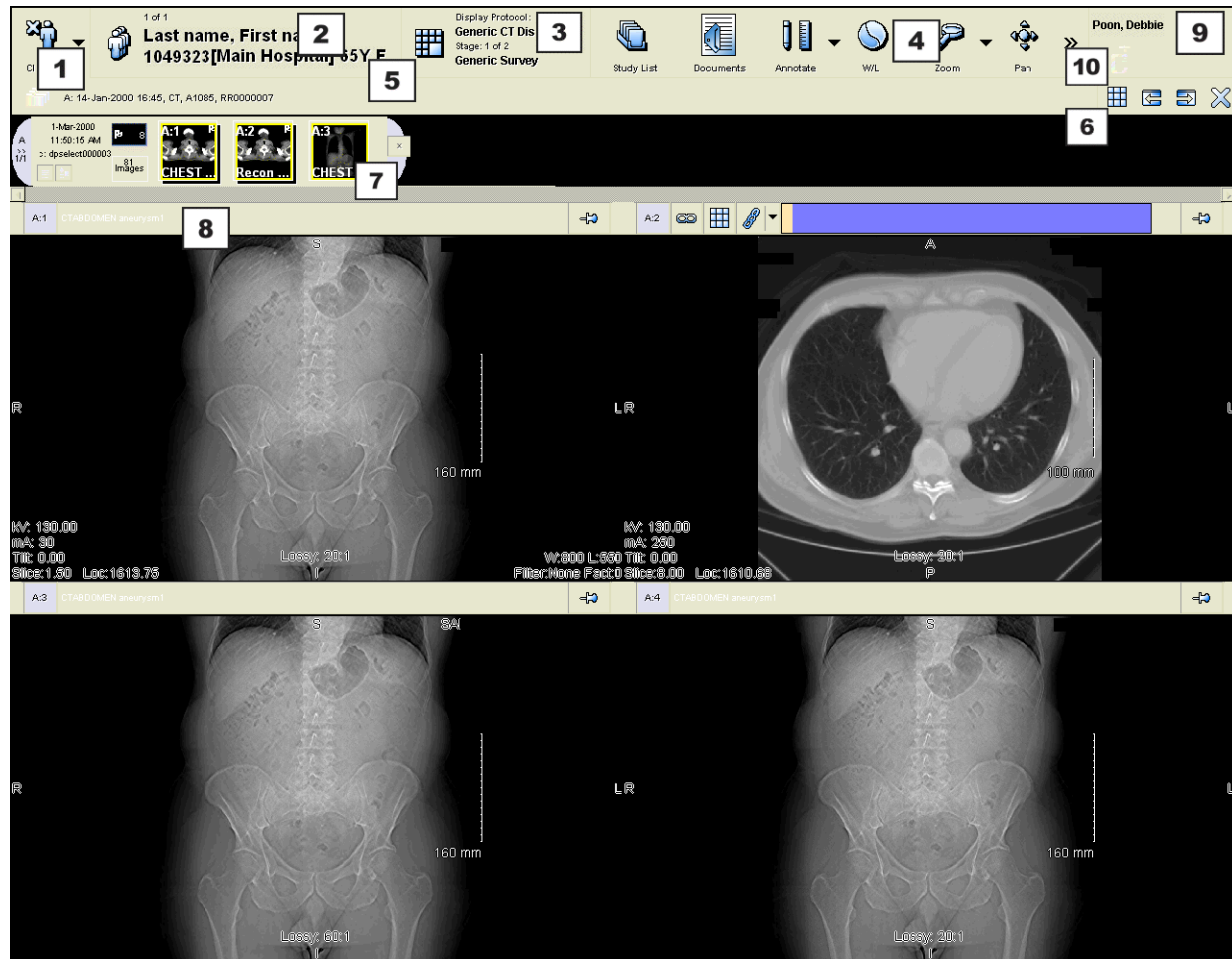
This section contains the following topics:

Topic	See Page
Understanding the Horizon Rad Station work area	338
Patient Identification button	340
Display Protocol button	342
Study Information bar	343
Study toolbar	345
Using the main toolbar	346
Using the Thumbnail toolbar	349
Understanding viewports	354
Alert icons	357

## Understanding the Horizon Rad Station work area

This section identifies the main components of the Horizon Rad Station work area.

Figure A-1 Horizon Rad Station work area



### Work area components

The following table lists the components of the Horizon Rad Station work area. The numbers indicate the location of the components.

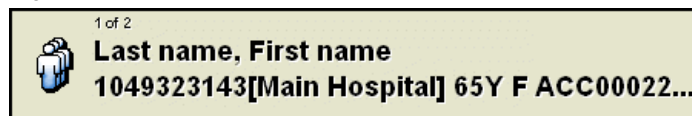
Component	Description
1 Close icon	Closes all studies belonging to the patient. See “Closing a study without changing its status” on page 331.
2 Patient Identification button	Displays information about the patient whose study you are currently viewing. See “Patient Identification button” on page 340.

Component	Description (Continued)
3 <b>Display Protocol</b> button	Displays information about the <b>display protocol</b> applied to the study. See “ <b>Display Protocol button</b> ” on page 342.
4 Main toolbar	Displays a collection of icons. Each icon represents a feature of Horizon Rad Station. See “ <b>Using the main toolbar</b> ” on page 346.
5 Study Information bar	Displays information about the study. See “ <b>Study Information bar</b> ” on page 343.
6 Study toolbar	Displays the icons for setting the screen layout and navigating studies. See “ <b>Study toolbar</b> ” on page 345.
7 Thumbnail toolbar	Provides an overview of each open study. The thumbnail toolbar indicates: <ul style="list-style-type: none"> <li>• The number of <b>series</b> in the study</li> <li>• The types of images in the series</li> <li>• The number of flagged images in the study</li> </ul> See “ <b>Using the Thumbnail toolbar</b> ” on page 349.
8 Viewport	Enables you to view and manipulate images in a series. See “ <b>Understanding viewports</b> ” on page 354.
9 Logged-on user	Displays the name of the user who is logged on to Horizon Rad Station.
10 Alert icons	Alert you to events that may require your attention. See “ <b>Alert icons</b> ” on page 357.

## Patient Identification button

The **Patient Identification button** is located at the top of the **work area**. It displays information about the patient whose study you are currently viewing.

Figure A-2 Patient Identification button



### Information on the Patient Identification button

The Patient Identification button contains the following information:

Patient information	Details
Placement in the order of patients whose studies are open	The patients are sorted in ascending order (A-Z) by last name and first name.  For example, if studies for Bob Dendoff and Patricia Rose are open, <b>1 of 2</b> is displayed for Bob Dendoff.
Name	The patient name is displayed in the format of <i>last name, first name middle name</i> .
Patient ID	Identification number assigned to the patient. For a multi-site hospital, the ID Context that represents the site is also displayed beside the Patient ID.
Age	The patient's age at the time the study was performed. For example, <b>65Y</b> means that the patient was 65 years old.
Gender	The patient's anatomical sex. Possible options are: <ul style="list-style-type: none"> <li>• <b>F</b> (Female)</li> <li>• <b>M</b> (Male)</li> <li>• <b>O</b> (Other)</li> </ul> If the patient gender is unknown, it is not displayed.
Accession Number	Unique identification number that a <b>HIS</b> , <b>RIS</b> , or third-party ordering system assigns to a study. Some sites use this number to track patient visits for billing purposes.

## Using the Patient Identification button

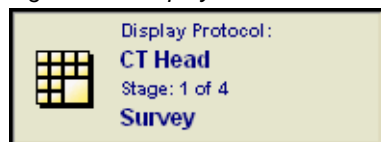
When you click the Patient Identification button, you can:

- Display the [Folder Finder](#), to find and open studies of any status. For details, see [“Understanding the Folder Finder”](#) on page 20.
- Switch between open studies belonging to different patients. For details, see [“Switching between open studies for different patients”](#) on page 39.
- Close all open studies without changing their status. For details, see [“Closing all open studies”](#) on page 330.

## Display Protocol button

The **Display Protocol button** is located at the top of the **work area**. It displays information about the **display protocol** applied to the study you are currently viewing. For details on display protocols, see [“About display protocols”](#) on page 212.

Figure A-3 Display Protocol button



### Information on the Display Protocol button

The **Display Protocol** button contains the following information:

Display protocol information	Details
Name	<p>Displays the name of the display protocol applied to the study you are viewing. For example, <b>CT Head</b>.</p> <hr/> <p><b>Note:</b> When a <b>Bookmark</b> is applied to the study, <b>Bookmark in Use</b> is displayed instead. For details, see <a href="#">“Using Bookmarks”</a> on page 180.</p>
Current display protocol stage	<p>Displays the following information about the current display protocol stage:</p> <ul style="list-style-type: none"> <li>• Placement in the order of the stages, for example, <b>Stage: 1 of 4</b> means that the stage is the first of the four stages the display protocol contains.</li> <li>• Name of the stage. For example, <b>Survey</b>.</li> </ul> <p>For details on display protocol stages, see <a href="#">“Understanding display protocol stages”</a> on page 257.</p>

### Using the Display Protocol button

When you click the **Display Protocol** button, you can:

- Manage the current display protocol
- Apply another display protocol to the study

For details, see [“Working with display protocols”](#) on page 211.

## Study Information bar

The **Study Information bar** displays information about the studies that you are currently viewing. It enables you to:



- View information about the anchor study and reference studies that are displayed on different monitors. The anchor study is the first study opened, and reference studies are additional studies opened for the same patient.
- Compare information about the anchor study and reference studies that are displayed on the same monitor.

Figure A-4 Study Information bar



### Information on the Study Information bar

The Study Information bar contains the following information.

Study information	Details
Other studies icon	<p>Whether the patient has other studies.</p> <p>The following icon indicates that the patient has only one study:</p>  <p>The following icon indicates that the patient has multiple studies:</p> 
Study priority	<p>The study priority is displayed if:</p> <ul style="list-style-type: none"> <li>• The study is the <b>anchor study</b>, and</li> <li>• The study has one of the two highest priorities (Stat or High)</li> </ul> <hr/> <p><b>Note:</b> The name of the priorities can be configured in <b>PACS Admin</b>. For details, refer to the Horizon Medical Imaging™ <i>Administrator's Guide</i>, or the Online Help within PACS Admin.</p>



Study information	Details (Continued)
Study status	<p>The current standing of the study in the workflow.</p> <ul style="list-style-type: none"> <li>For the anchor study, the status is displayed if the status is <b>In-Progress</b>, <b>Needs Over-Read</b>, <b>Transcribed</b>, <b>Dictated</b>, or <b>Reported</b>.</li> <li>For the <b>reference studies</b>, the status is displayed if the status is <b>In-Progress</b> or <b>unreported</b>.</li> </ul> <p>For details on the study statuses, see the <b>"Glossary"</b> on page 413.</p>
Study Sequence	<p>The sequence in which studies were opened:</p> <ul style="list-style-type: none"> <li>The anchor study is indicated by the letter <b>A</b>.</li> <li>Reference studies are indicated by the letter <b>R</b>, followed by a number. The order of the reference studies is based on the study date. For example, the most recent reference study is labelled <b>R1</b>, the second most recent reference study is labelled <b>R2</b>, and so on.</li> </ul>
Study date	Date on which the study was performed. For example, 12-May-2000.
Study time	Time at which the study was performed. For example, 11:58.
Modality	Types of images the study contains. For example, <b>MR</b> .

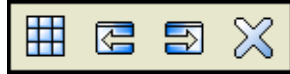
### Using the Study Information bar

When you click the Study Information bar, you can list and open additional studies belonging to the patient. For details, see **"Opening additional studies for the same patient"** on page 36.

## Study toolbar





The **Study toolbar** enables you to set the screen layout and navigate studies. It is located below the **main toolbar** (Figure A-6 on page 346).

Figure A-5 Study toolbar



### Study toolbar icons

The Study toolbar includes the following icons.

Icon	Meaning
<b>Screen layout</b> 	Set the screen layout. For details, see <a href="#">“Setting the screen layout”</a> on page 62.
<b>Cycle Previous</b> 	Display the previous set of <b>series</b> within the selected study. For details, see <a href="#">“Cycling series”</a> on page 57.
<b>Cycle Next</b> 	Display the next set of series within the selected study. For details, see <a href="#">“Cycling series”</a> on page 57.
<b>Close Study</b> 	Close the study. This icon is dimmed when no studies are open. For details, see <a href="#">“Closing a study without changing its status”</a> on page 331.

## Using the main toolbar

This section describes the main toolbar, and how to modify and resize it.

### In this section

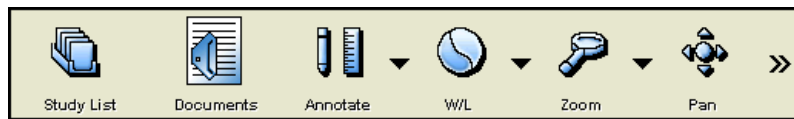
This section contains the following topics:

Topic	See Page
<a href="#">About the main toolbar</a>	346
<a href="#">Modifying the main toolbar</a>	347

### About the main toolbar

The **main toolbar** is a collection of icons. Each icon represents a feature or a task performed in Horizon Rad Station. The main toolbar is displayed at the top right corner of the **work area**.

Figure A-6 Main toolbar



**Note:** The icon labels can be displayed or hidden. For details, see “[Main toolbar preferences](#)” on page 296.

### Default main toolbar

The default main toolbar is displayed the first time you log on to Horizon Rad Station. It contains the following icons, in the listed order:

- **Studies**
- **Find**
- **Annotate**
- **W/L**
- **Zoom**
- **Pan**
- **Flag**
- **Preferences**
- **Quit**

## Manipulating the main toolbar

The main toolbar can be quickly modified. See “[Modifying the main toolbar](#)” on page 347.

## Modifying the main toolbar

You can quickly modify the [main toolbar](#) in the following ways:

- Add or remove an icon
- Rearrange order of an icon

---

**Note:** The main toolbar can also be modified in your Main toolbar Preferences. See “[Main toolbar preferences](#)” on page 296.

---

## Adding a main toolbar icon

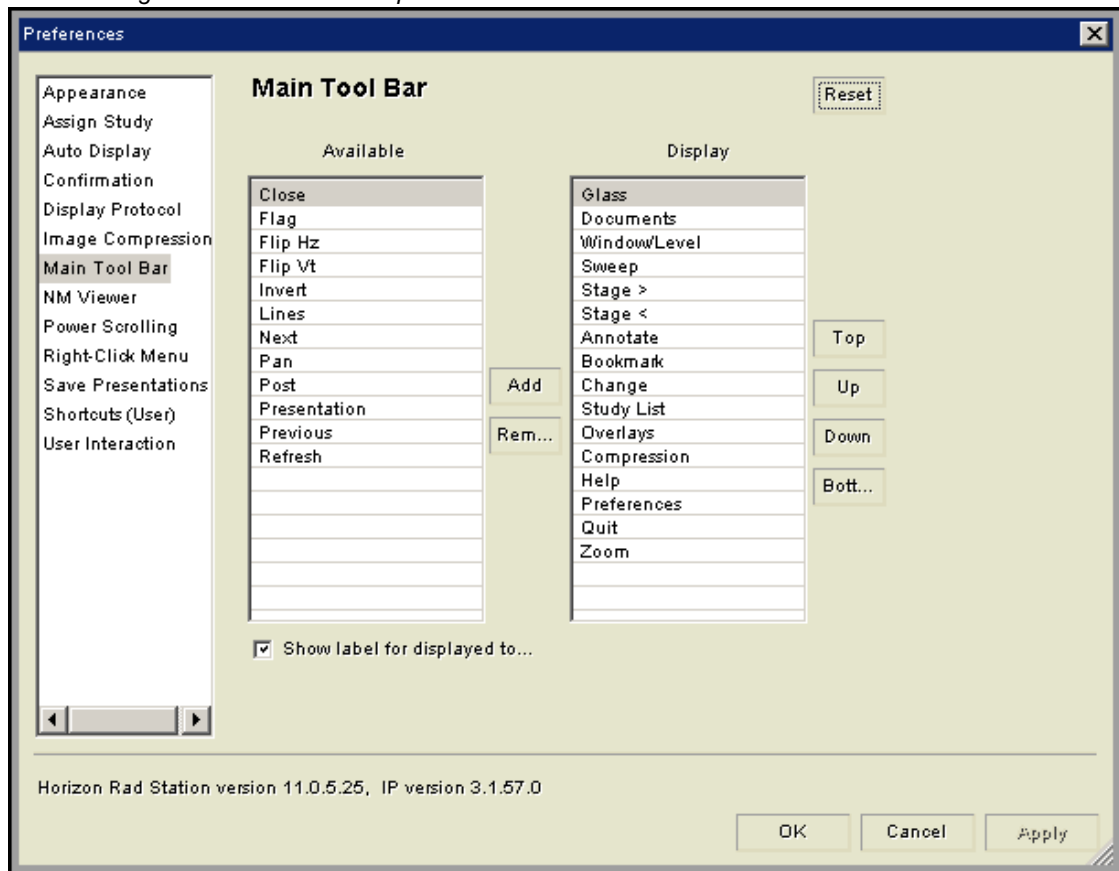
An icon can be added to the end of the main toolbar.

To add an icon to the main toolbar:

- 1 Right-click anywhere on the main toolbar, and then select **Add Tool**.

The **Preferences** dialog box is displayed, listing the **Main Tool Bar Menu** preferences on the right.

Figure A-7 Main Tool Bar preferences



- 2 In the **Available** list, click the icon that you want to add.
- 3 Click **Add**.  
The icon is moved to the bottom of the **Display** list.
- 4 Click **OK**.

### Removing a main toolbar icon

To quickly remove an icon:

- Right-click the icon that you want to remove, and then select **Remove Tool**.

### Rearranging the order of the icons

To quickly rearrange the order of icons:

- **Drag** the icon to where you want to place on the main toolbar, and then release the mouse button.

## Using the Thumbnail toolbar

This section describes how to use the Thumbnail toolbar.

### In this section

This section contains the following topics:

Topic	See Page
<a href="#">About the Thumbnail toolbar</a>	349
<a href="#">Thumbnails</a>	351
<a href="#">Thumbnail dialog box</a>	352
<a href="#">Displaying and hiding the Thumbnail toolbar</a>	353

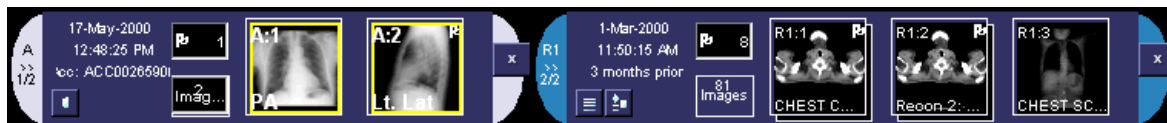
### About the Thumbnail toolbar

The [Thumbnail toolbar](#) provides an overview of each open study. It indicates the following information:

- The number of [series](#) in the study
- Information about the series
- The number of flagged images in the study
- Whether the study contains [patient documentation](#) (reports, audio messages, scanned documents, and/or diagrams)

For details, see [“Thumbnail toolbar components”](#) on page 350.


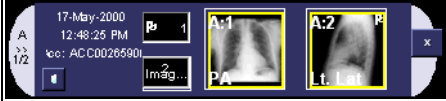




Figure A-8 Thumbnail toolbar



The Thumbnail toolbar can be displayed or hidden. See [“Displaying and hiding the Thumbnail toolbar”](#) on page 353.

## Thumbnail toolbar components

The following table describes the Thumbnail toolbar components.

Thumbnail toolbar component	Description
<p>Study Container</p> <p>Closed Study Container</p>  <p>Open Study Container</p> 	<p>Represents an open study for the patient. By default, the Study Container is open. You can:</p> <ul style="list-style-type: none"> <li>Close the Study Container, by clicking the collapse (&lt;&lt;) button on its right side.</li> <li>Re-open the Study Container, by clicking the expand (&gt;&gt;) button on its right side.</li> </ul> <p>You can also close the study, by clicking the close (x) button on its right side.</p>
<p>Flagged images button</p> 	<p>Identifies how many images are flagged in the study.</p> <p>You can display all the flagged images in a viewport, by <b>dragging</b> this button to the viewport.</p>
<p>All images button</p> 	<p>Identifies how many images the study contains.</p> <p>You can display all the images in a viewport by <b>dragging</b> this button to the viewport.</p>
<p>All images label</p> 	<p>Indicates that all images within the study cannot be displayed due to your site configuration.</p>
<p>Thumbnail</p> 	<p>Represents a <b>series</b>. The first image for each series is used as the thumbnail. For details, see <b>"Thumbnails"</b> on page 351.</p>

## Using the Thumbnail toolbar

Using the Thumbnail toolbar, you can:

- Display images. For details, see **"Displaying a series in a viewport"** on page 44 and **"Displaying all images and all flagged images in a viewport"** on page 45.
- Change the sequence of the series in the study. For details, see **"Re-ordering series"** on page 61.
- Display images in a **Zoom window** or **Survey window**. For details, see **"Displaying a series in a separate window"** on page 46.

- Close the study. For details, see “Closing a study without changing its status” on page 331.

## Thumbnails



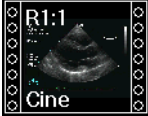


Each thumbnail represents a **series**. The thumbnail displays the following information about the series it represents:

- Series sequence. For example, **A:1** indicates the first series of the anchor study, and **R1:2** indicates the second series of the first reference study. The series sequence is located at the top left corner of the thumbnail. For details on the two types of studies, see “About anchor, reference, and grouped studies” on page 49.
- Series description. The series description is located at the bottom of the thumbnail.

## Thumbnail appearance

The appearance of the thumbnails indicates information about the images in the series.

The following table describes the thumbnail display properties.

Thumbnail display property	Meaning
 A:1 SCOUT	The series contains one image only.
 A:2 AXIALS...	The series contains more than one image.
 R1:1 Cine	The series contains a <b>cine clip</b> . For details, see “Working with cine clips” on page 185.
 A:1 CHEST/ABD	The series is currently displayed in a viewport.  <b>Note:</b> The thumbnail is surrounded by a solid border and the series description is displayed in bold text.
 A:2 ABOW/D	The series contains flagged images.  <b>Note:</b> A flag is displayed at the top right corner of the thumbnail.

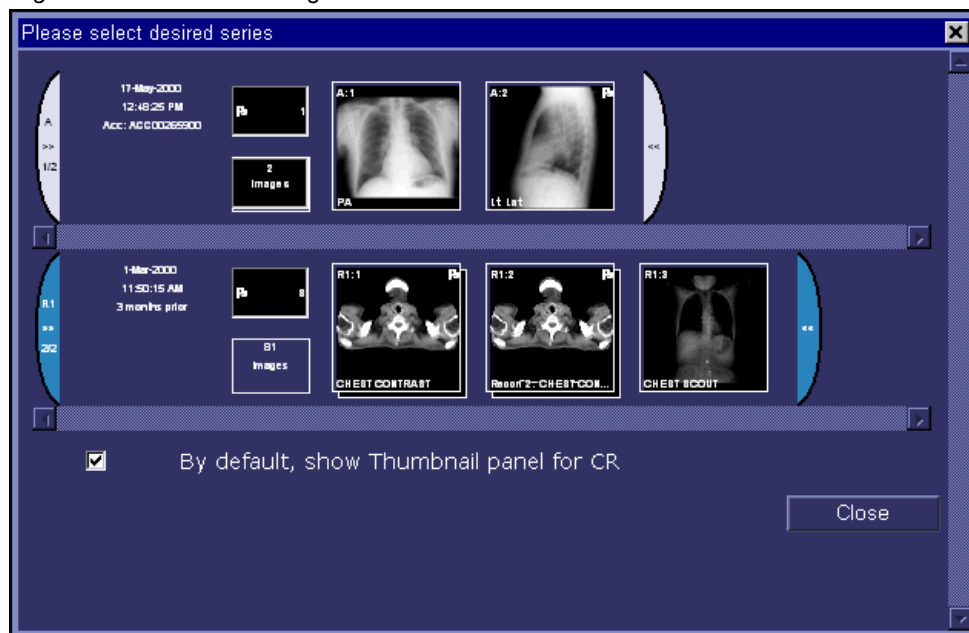


## Thumbnail dialog box

The **Thumbnail dialog box** provides an overview of the current patient's open studies. It contains the same components as the **Thumbnail toolbar**. For details, see “**Thumbnail toolbar components**” on page 350.

The Study Containers that represent the open studies are displayed one above the other, with the anchor study located at the top, and then the reference studies.

Figure A-9 Thumbnail dialog box



### Displaying the Thumbnail dialog box

To display the Thumbnail dialog box:

- Click the Series Selector button on a viewport. The button indicates the currently displayed series in the viewport. For details on viewports, see “**Understanding viewports**” on page 354.



### Using the Thumbnail dialog box

Using the Thumbnail dialog box, you can:

- Display a series in a viewport. For details, see “**Displaying a series using the Thumbnail dialog box**” on page 45.
- Display or hide the Thumbnail toolbar. For details, see “**Displaying and hiding the Thumbnail toolbar**” on page 353.

## Displaying and hiding the Thumbnail toolbar

If you need additional viewing space, you can hide the **Thumbnail toolbar**. The Thumbnail toolbar can be redisplayed at any time during the review session. For details, see “[About the Thumbnail toolbar](#)” on page 349.

**Note:** The Thumbnail toolbar is displayed or hidden for the **modality** of the **anchor study**. For example, if you hide the Thumbnail toolbar for a **CT** anchor study, the next time you open a CT study, the Thumbnail toolbar is hidden.

### Steps for this task

To display or hide the Thumbnail toolbar:

- 1 Click the Series Selector button on a viewport.



The Thumbnail dialog box is displayed. See *Figure A-9* on page 352.

- 2 Do one of the following:

If...	Then...
Displaying the Thumbnail toolbar	Select the <b>By default, show thumbnail panel for</b> check box.
Hiding the Thumbnail toolbar	Clear the <b>By default, show thumbnail panel for</b> check box.

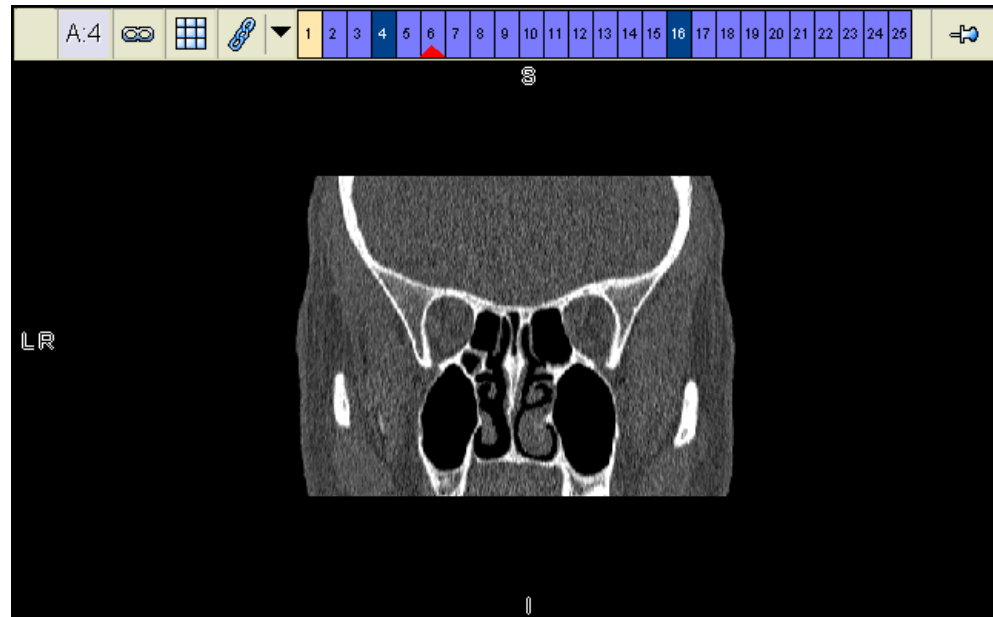
- 3 Click **Close**.

The Thumbnail toolbar is displayed or hidden accordingly.

## Understanding viewports

A **viewport** is a panel where images in a **series** are displayed and manipulated.






Figure A-10 Viewport



### Viewport components

The following table describes the viewport components.

Viewport Component	Description
<p>Series Selector button</p>	<p>Identifies the study and series displayed in the viewport. For example,</p> <ul style="list-style-type: none"> <li><b>A:1</b> denotes the anchor study, first series</li> <li><b>R1:1</b> denotes the first reference study of any modality, first series</li> <li><b>R1 (CT1):1</b> denotes the first reference study of <b>CT</b> modality, first series</li> </ul> <p>For details on anchor study and reference studies, see <a href="#">“About anchor, reference, and grouped studies”</a> on page 49.</p> <p>In addition, the Series Selector buttons distinguish the open studies by having different colors and font styles.</p>

Viewport Component	Description (Continued)
<p><b>Display Mode</b> icon</p> 	<p>Indicates the types of images currently displayed. In addition, you can:</p> <ul style="list-style-type: none"> <li>• Select the display mode for the series. See <a href="#">“Selecting the series display mode”</a> on page 49.</li> <li>• Display all images, selected images, or flagged images in the series. See <a href="#">“Specifying the series viewing scope”</a> on page 51.</li> <li>• Create <a href="#">Multi-Planar Reconstruction (MPR) images</a>. See <a href="#">“About creating MPR images”</a> on page 98.</li> </ul>
<p><b>Viewport Layout</b> icon</p> 	<p>Enables you to specify how many images to display in the viewport. See <a href="#">“Setting the viewport layout”</a> on page 63.</p>
<p><b>Link</b> icon</p> 	<p>Indicates whether the series is currently linked with another series. A linked series can be scrolled with other linked series.</p> <p>You can link or unlink the series. See <a href="#">“Linking and unlinking series”</a> on page 64.</p>
<p><b>Chits</b></p> 	<p>Represent images in the series. Chits can appear in different colors. See <a href="#">“Chit colors”</a> on page 356.</p> <p>You can display an image, by clicking the corresponding chit. Depending on the number of images contained in the series, different display properties are applied to the chits. See <a href="#">“Chit display properties”</a> on page 356.</p>
<p><b>Pin</b> icon</p> 	<p>Indicates whether a viewport is pinned or not. A pinned viewport is not used in cycling series. For details, see <a href="#">“Cycling series”</a> on page 57.</p> <p>You can pin or unpin a viewport. See <a href="#">“Pinning and unpinning a viewport”</a> on page 58.</p>
<p>Image viewing area</p>	<p>Holds images in the series.</p> <p>You can manipulate displayed images. For details, see <a href="#">“Working with images”</a> on page 73.</p>

## Chit colors

A highlighted chit identifies the image that is displayed in the viewport. Each chit represents an image in a series. When an image is displayed in the viewport, its chit is selected.

Chits can appear in different colors. Different chit colors help you to identify the following items:

- Active images
- Visible images
- Selected images
- Viewed images
- Loaded images
- Partially loaded images
- Not loaded images
- Images marked for deletion

Figure A-11 Example of color-coded chits



The chit colors are assigned at installation. For details, contact McKesson Medical Imaging Group.

## Chit display properties

Depending on the number of images contained in the series, chits can have different display properties. The following table describes the chit display properties.




Chit display property	Description
<p>Fully expanded</p>	Image numbers are displayed on the chits. If you click a chit, the corresponding image is displayed in the viewport.
<p>Partially compressed</p>	The series contains a higher number of images. Image numbers are not displayed, and the chit width is reduced. If you click a chit, the corresponding image is displayed in the viewport.
<p>Fully compressed</p>	The series contains an even higher number of images, and the chits are shown as a continuous band. If you click the band, the corresponding image is displayed in the viewport.

## Alert icons

The alert icons are located below the logged-on user's name, at the top right corner of the [work area](#). They alert you to events that may require your attention.

### Meaning of the alert icons

The following table describes the alert icons.

Icon	Meaning
	<p>Not all images are ready for viewing and dictation.</p> <p>Images may not be ready for viewing under the following circumstances:</p> <ul style="list-style-type: none"> <li>• The study is being merged</li> <li>• Images are being captured while you are viewing the study</li> <li>• Images are being moved or imported while you are viewing the study</li> </ul>
	<p>This study contains <a href="#">quality assurance (QA) issues</a>.</p>
	<p>The study images are compressed. See <a href="#">"Changing image compression"</a> on page 137.</p>



## Appendix B - Using shortcuts

This section describes the Horizon Rad Station shortcuts.

### In this section

This section contains the following topics:

Topic	See Page
<a href="#">Overview of using shortcuts</a>	360
<a href="#">Available shortcuts</a>	361
<a href="#">Reserved Windows® shortcuts</a>	373



## Overview of using shortcuts

Shortcuts enable you perform a task quickly. They eliminate the need to click an icon, select a menu option, or carry out a series of steps. For a list of tasks that can be performed using shortcuts, see [“Available shortcuts”](#) on page 361.

Shortcuts are defined by individual users for their personal use. You can also modify and remove your personal shortcuts. For details, see [“User shortcuts”](#) on page 304.

## Available shortcuts

This section describes commands to which shortcuts can be assigned.

### In this section

This section contains the following topics:

Topic	See Page
Annotations commands	361
Flag command	362
Image Viewport commands	363
Index Viewport commands	364
Layout commands	365
Link command	366
Magnifying Glass command	367
Miscellaneous commands	367
Orientation commands	368
Post Processing command	369
Presentations and Bookmarks commands	369
Window/Level commands	370
Workflow commands	371
Zoom/Pan commands	372

## Annotations commands

This section describes the Annotations commands to which [shortcuts](#) can be assigned. For details, see [“Adding annotations”](#) on page 139.

### Commands and their descriptions

The following table describes the commands.

Command	Description	System default
Arrow	Place arrows on an image.	A
Calibrate	Define the measurement scale.	
Cobb Angle	Draw and measure a <a href="#">Cobb angle</a> .	

Command	Description (Continued)	System default (Continued)
Cover	Mask an image, by covering an area of the image with a rectangle.	
Delete All	Delete all temporary annotations from a single image, selected images, or all images in the series.	
Ellipse	Place ellipses on an image.	SHIFT+C
Elliptical ROI	Define an Elliptical Region of Interest (ROI), and measure its pixel intensity parameters, area, and perimeter.	C
Eraser	Delete a temporary annotation.	
Intensity Analysis	Measure the pixel intensity of a point.	=
Label Disk	Add disk labels.	SHIFT+D
Label Vertebrae	Add vertebrae labels.	V
Linear Distance	Draw a line and measure the distance between the endpoints.	D
Simple Angle	Draw and measure an angle in degrees.	SHIFT+A
Show/Hide Annotations	Display or hide annotations.	
Text	Place comments on an image.	T

## Flag command

This section describes the Flag command to which a [shortcut](#) can be assigned. For details, see [“Flagging and unflagging images”](#) on page 75.

### Command and its description

The following table describes the command.

Command	Description	System default
Toggle Flag Status	Flag or unflag selected images.	SPACEBAR

## Image Viewport commands

This section describes the Image Viewport commands to which **shortcuts** can be assigned. For details, see the following topics:

- “**Displaying a series in a separate window**” on page 46
- “**Selecting and deselecting images**” on page 74
- “**Navigating the display protocol stages**” on page 259

### Commands and their descriptions

The following table describes the commands.

Command	Description	System default
Display Survey Window	Display the series in a <b>Survey window</b> .	
Display Zoom Window	Display the <b>series</b> in a <b>Zoom window</b> .	
Jump To End	Display the last image of the series	END
Jump To Middle	Display the middle image of the series.	INSERT
Jump To Start	Display the first image of the series.	HOME
Page Backward	Scroll the series backward by one page.	PAGE UP
Page Forward	Scroll the series forward by one page.	PAGE DOWN
Row Backward	Scroll the series backward by one row.	UP arrow
Row Forward	Scroll the series forward by one row.	DOWN arrow
Select multiple images	Select multiple images within the same or different series.	CTRL+Click  <b>Note:</b> This shortcut is view-only.
Select single image	Select an image.	Click  <b>Note:</b> This shortcut is view-only.
Show Next Stage	Display the display protocol stage immediately after the currently displayed stage.	]
Show Previous Stage	Display the <b>display protocol stage</b> immediately preceding the currently displayed stage.	[

## Index Viewport commands

This section describes the Index Viewport commands to which **shortcuts** can be assigned. For details, see the following topics:

- “Creating MPR images” on page 98
- “Viewing cine clips” on page 188

### Commands and their descriptions

The following table describes the commands.

Command	Description	System default
Clear 3D/MPR Range	Create <b>Multi-Planar Reconstruction (MPR)</b> images for the entire series.	
End 3D/MPR Range	Mark the image as the last image for creating MPR images.	
Mode Loop	Play the <b>cine clip</b> continuously in a loop, until you manually stop or pause the cine clip.	
Mode run once	Play the cine clip once from beginning to end.	
Mode wave	Play the cine clip from beginning to end, then reverse and play the clip from end to beginning.	
Play All/Stop All toggle	Play and pause all cine clip, or <b>series</b> in Cine mode.	CTRL+SHIFT+P
Play/Stop toggle	Play and pause the cine clip, or series in Cine mode.	CTRL+P
Speed decrease	Decrease the cine playback speed.	
Speed full	Play the cine clip at its acquisition frame rate.	
Speed half	Play the cine clip at half of its acquisition frame rate.	
Speed increase	Increase the cine playback speed.	
Speed quarter	Play the cine clip at a quarter of its acquisition frame rate.	
Start 3D/MPR Range	Mark the image as the first image for creating MPR images.	
Switch to Axial View	Create MPR images in the <b>axial</b> plane.	ALT+A

Command	Description (Continued)	System default (Continued)
Switch to Coronal View	Create MPR images in the <b>coronal</b> plane.	ALT+C
Switch to Sagittal View	Create MPR images in the <b>sagittal</b> plane.	ALT+S

## Layout commands

This section describes the Layout commands to which **shortcuts** can be assigned. For details, see the following topics:

- “Moving series between viewports” on page 52
- “Navigating a series” on page 54
- “Cycling series” on page 57
- “Setting the viewport layout” on page 63

### Commands and their descriptions

The following table describes the commands.

Command	Description	System default
Cycle all series backward	Display the previous set of series, in the unpinned <b>viewports</b> .	LEFT arrow
Cycle all series forward	Display the next set of series, in the unpinned viewports.	RIGHT arrow
Cycle series backward	Display the previous series in the viewport.	CTRL+LEFT arrow
Cycle series forward	Display the next series in the viewport.	CTRL+RIGHT arrow
Drag and Drop Image Viewports	Move a <b>series</b> from one viewport to another	Drag  <b>Note:</b> This shortcut is view-only.
Layout 1x1	Set the viewport layout to <b>One Up</b> .	
Layout 1x2	Set the viewport layout to <b>Vertical Split</b> .	2
Layout 2x1	Set the viewport layout to <b>Horizontal Split</b> .	3
Layout 2x2	Set the viewport layout to <b>Four Up</b> .	4

Command	Description (Continued)	System default (Continued)
Layout 3x3	Set the viewport layout to <b>Nine Up</b> .	5

## Link command

This section describes the Link command to which a [shortcut](#) can be assigned. For details, see [“Working with linked series”](#) on page 64.

### Command and its description

The following table describes the command.

Command	Description	System default
Frame Offset	Apply an offset to the <a href="#">series</a> , based on the number of frames.	
Link All	Link all viewports.	
Link Sequence	Link the viewport.	
Precise Registration	Apply precise registration.	
Quick Registration	Apply quick registration to the linked series.	
Remove Active Series Registration	Remove the registration from the series.	
Remove All Registration	Remove all registrations from the study.	
Remove Offset	Remove the offset from the series.	
Reset All	Remove all offsets and registrations from the study.	
Scroll To Point	Interactively display a point in the linked series.	CTRL+SHIFT+Drag
Spatial Offset	Apply an offset to the series, based on spatial relationship.	5 <sup>th</sup> drag
Unlink All	Unlink all viewports.	
Unlink Sequence	Unlink the viewport.	

## Magnifying Glass command

This section describes the Magnifying Glass command to which a [shortcut](#) can be assigned. For details, see [“Magnifying a region of interest \(ROI\)”](#) on page 92.

### Command and its description

The following table describes the command.

Command	Description	System default
Launch magnifying glass	Display the Magnifying Glass.	SHIFT+M

## Miscellaneous commands

This section describes the Miscellaneous commands to which [shortcuts](#) can be assigned. For detail, see the following topics:

- [“Viewing images”](#) on page 77
- [“Inverting the image contrast”](#) on page 131
- [“Displaying study details”](#) on page 74

### Commands and their descriptions

The following table describes the commands.

Command	Description	System default
Close DICOM Header Viewer	Close the <a href="#">DICOM header</a> .	
Display DICOM Header	View DICOM header information for the image.	H
Invert Image Series	Reverse the gray values of all images in the series.	I
Show Scale	Display or hide the scale indicator.	
Toggle Text	Display all or minimal <a href="#">text overlay</a> , or hide it.	
View Study Details	Display details about the study.	



## Orientation commands

This section describes the Orientation commands to which **shortcuts** can be assigned. For details, see “**Reorienting images**” on page 91.

### Commands and their descriptions

The following table describes the commands.

Command	Description	System default
Flip Horizontally	Flip the image horizontally, as if viewing it in a mirror.	SHIFT+H
Flip Vertically	Flip the image vertically, as if viewing it upside down.	SHIFT+V
Rotate Clockwise	Rotate the image 90° to the right.	SHIFT+RIGHT arrow
Rotate Counter-Clockwise	Rotate the image 90° to the left.	SHIFT+LEFT arrow

## Post Processing command

This section describes the Post Processing command to which a [shortcut](#) can be assigned. For details, see [“Applying post processing”](#) on page 132.

### Command and its description

The following table describes the command.

Command	Description	System default
Activate Post Processing	Display the <b>Post Processing</b> dialog box.	SHIFT+O

## Presentations and Bookmarks commands

This section describes the Presentations and Bookmarks commands to which [shortcuts](#) can be assigned. For details, see [“Using Stored Image Presentations”](#) on page 171 and [“Using Bookmarks”](#) on page 180.

### Commands and their descriptions

The following table describes the commands.

Command	Description	System default
Load Bookmark	Apply a <a href="#">Bookmark</a> to the study.	
Load Presentation	Apply a <a href="#">Stored Image Presentation (SIP)</a> to the study.	
Load Working Annotation Set for Active Series	Display the working annotation set for the <a href="#">series</a> .	
Load Working Annotation Set for Active Study	Display the working annotation set for the study.	
Make Current	Make a historical <a href="#">annotation</a> set the working annotation set.	

---

## Window/Level commands

This section describes the Window/Level commands to which **shortcuts** can be assigned. For details, see “**Changing the image contrast and brightness**” on page 105.

### Commands and their descriptions

The following table describes the commands.

Command	Description	System default
Activate Window/Level Tool	Display the <b>Window/Level</b> panel.	
Apply Default	Apply the Default Window/Level.	
Apply Estimate	Apply the Estimate Window/Level.	
Preset <name>	Apply the corresponding Window/Level <b>preset</b> .	

## Workflow commands

This section describes the Workflow commands to which **shortcuts** can be assigned. For details, see the following topics:

- “**Displaying the In-Box**” on page 12
- “**Displaying the Folder Finder**” on page 16
- “**Changing study status and closing studies**” on page 317

### Commands and their descriptions

The following table describes the commands.

Command	Description	System default
Close All Studies	Close all open studies without changing their <b>status</b> .	
Close Study	Close the study without changing its status.	F7
Close Study as Dictated	Close the study and change the status to <b>Dictated</b> .	
Close Study as Needing Over-Read	Close the study and change the status to <b>Needs Over-Read</b> .	
Close Study as Reported	Close the study and change the status to <b>Reported</b> .	
Close Study as Reviewed	Close the study and change the status to <b>Reviewed</b> .	
Mark Study as Dictated	Change the study status to Dictated.	
Mark Study as Needing Over-Read	Change the study status to Needs Over-Read.	
Mark Study as Performed	Change the study status to <b>Performed</b> .	
Mark Study as Reported	Change the study status to Reported.	
Mark Study as Reviewed	Change the study status to Reviewed.	
Mark Study as Transcribed	Change the study status to <b>Transcribed</b> .	
Search for Studies by Patient Name	Display the <b>Folder Finder</b> .	F4
Show Unreported Studies	Display the <b>In-Box</b> , and list the unreported studies.	F3

## Zoom/Pan commands

This section describes the Zoom/Pan commands to which **shortcuts** can be assigned. For details, see “**Zooming and panning images**” on page 83.

### Commands and their descriptions

The following table describes the commands.

Command	Description	System default
100%	Display the images at the original image size.	
200%	Display the images at 200% of the original image size.	
50%	Display the images at 50% of the original image size.	
Interactive Pan	Use the mouse to pan images, without displaying the <b>Zoom and Pan</b> panel.	SHIFT+Drag
Interactive Zoom In Place	Use to mouse to zoom images, without displaying the <b>Zoom and Pan</b> panel.	CTRL+Mouse wheel
Life Size	Display the images at their true physical size.	
Match ROI	Match the region of interest (ROI) of all displayed images to the last selected image.	
Show Pan Tool	Display the <b>Zoom and Pan</b> panel, and select the Pan tool.	SHIFT+P
Show Zoom Panel	Display the <b>Zoom and Pan</b> panel, and select the Zoom tool.	SHIFT+Z
Zoom In	Zoom the images to 50% larger than the current size.	
Zoom Out	Zoom the images to 50% smaller than the current size.	
Zoom To Fit	Zoom the images to fit the <b>viewport</b> .	4 <sup>th</sup> mouse click

## Reserved Windows® shortcuts

Horizon Rad Station reserves **shortcut** keys that are commonly used in Windows®. These reserved shortcuts cannot be assigned to frequently performed tasks in Horizon Rad Station.

### List of reserved Windows® shortcuts

The following table describes the reserved Windows® shortcuts.

Shortcut	Meaning
CTRL+ALT+DELETE	Open the Windows® Task Manager.
ALT+TAB	Switch to another open application.
ESC	Close the dialog box.
ALT+F4	Close the dialog box. If no dialog box is currently displayed, this shortcut displays the quit confirmation message ( <i>Figure 1-11</i> on page 10).
ALT+PRINT SCREEN	Print the active window.
F1	Open the Online Help for the current application.



## Appendix C - Troubleshooting

This section contains troubleshooting tips for using Horizon Rad Station.

### In this section

This section contains the following topics:

Topic	See Page
Troubleshooting finding and opening studies	376
Troubleshooting image contrast and brightness	377
Troubleshooting image annotations	378
Troubleshooting display protocols	380
Troubleshooting shortcuts	383
Troubleshooting study status modification	385
Troubleshooting installing Horizon Rad Station	386
Troubleshooting starting Horizon Rad Station	387
Troubleshooting Microsoft® Internet Explorer error messages	395



## Troubleshooting finding and opening studies

When [finding and opening studies](#), you may encounter the following situations:

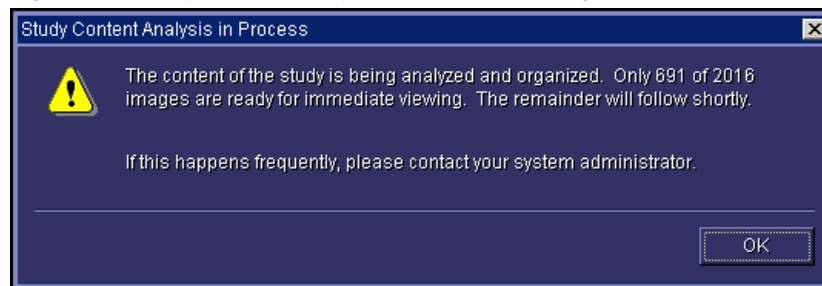
- “[The Study Content Analysis in Process message is displayed](#)” on page 376

### The Study Content Analysis in Process message is displayed

When you open or refresh a study, Horizon Rad Station checks whether all images are ready for viewing and dictation. In one the following situations, the **Study Content Analysis in Process** message is displayed:

- The study is being merged
- You are reading a live study
- Images are being moved or imported to the study

Figure C-1 Study Content Analysis in Process message



Click **OK**.

An alert icon is displayed below the logged-on user's name, at the top right corner of the [work area](#). When all images are ready for viewing and dictation, the alert icon is no longer displayed. See “[Alert icons](#)” on page 357.

## Troubleshooting image contrast and brightness

When [changing the image contrast and brightness](#), you may encounter the following situations:

- [“Horizon Rad Station beeps when I enter the Window/Level values”](#) on page 377
- [“Cannot modify a Window/Level preset”](#) on page 377

### Horizon Rad Station beeps when I enter the Window/Level values

Horizon Rad Station beeps when the new [Window/Level](#) values you specified are out of the possible physical range.

Depending on the site configuration, Horizon Rad Station either adjusts the values, or leaves them unchanged. For details, contact McKesson Medical Imaging Group.

### Cannot modify a Window/Level preset

An applied [Window/Level preset](#) cannot be modified when:

- You have not modified the [Window/Level](#) values or applied LUT function, or
- The Window/Level preset is not the most recently applied Window/Level.

In this case, when you click the **W/L** icon on the main toolbar, the **Update Preset** option is dimmed.

Review the **Name** box of the [Window/Level panel](#) ([Figure 5-7](#) on page 84).

If...	Then...
<b>[Interactive]</b> is not displayed in the <b>Name</b> box	You have not modified the Window/Level values or applied LUT function.  Modify the Window/Level values or applied LUT function. See <a href="#">“Adjusting the Window/Level values”</a> on page 109 and <a href="#">“Selecting a LUT function to apply”</a> on page 117
A Window/Level other than the Window/Level preset is listed in the <b>Name</b> box	The Window/Level preset is not the most recently applied Window/Level. Do the following: <ol style="list-style-type: none"> <li>1 Re-apply the preset. <a href="#">“Applying a Window/Level preset”</a> on page 113.</li> <li>2 Modify the applied preset. See <a href="#">“Modifying a Window/Level preset”</a> on page 127.</li> </ol>

## Troubleshooting image annotations

When [annotating images](#), you may encounter the following situations:

- [“The Historical annotation set displayed dialog box appears”](#) on page 378
- [“Horizon Rad Station beeps when I calibrate the measurement scale”](#) on page 379

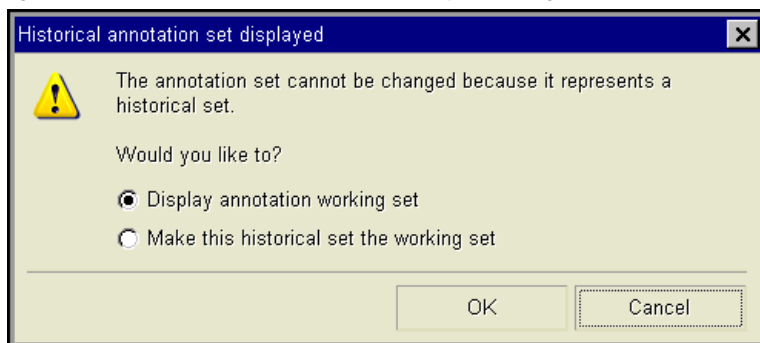
### The Historical annotation set displayed dialog box appears

The **Historical annotation set displayed** dialog box appears when:

- The [annotations](#) you want to work with have been saved and became historical, and
- Horizon Rad Station is not configured to automatically display the working annotation set. This configuration is set up by McKesson Medical Imaging Group. For details, see [“Automatically displaying the working annotation set”](#) on page 178.

**Note:** For details on the two types of annotation sets, see [“Persistent vs. temporary annotations”](#) on page 139.

Figure C-2 Historical annotation set displayed dialog box



You cannot work with annotations in the historical annotation sets. Do one of the following:

If...	Then...
Working with the annotation in the working annotation set	<ol style="list-style-type: none"> <li>1 Click <b>Display annotation working set</b>.</li> <li>2 Click <b>OK</b>.</li> </ol>
Working with the annotation in the historical annotation set	<ol style="list-style-type: none"> <li>1 Click <b>Make this historical set the working set</b>.</li> <li>2 Click <b>OK</b>.</li> </ol>

Now you can work with the annotations.

## Horizon Rad Station beeps when I calibrate the measurement scale

Horizon Rad Station beeps in one of the following situations:

- The scale is already calibrated from the image [DICOM header](#).
- The scale has been manually calibrated.

There can be one measurement scale for an image only. If the measurement scale is not calibrated from the DICOM header, do one of the following:

- Update the existing scale. See [“Calibrating the measurement scale”](#) on page 155.
- Delete the existing scale as you would an annotation (See [“Deleting annotations”](#) on page 169), and then add a new scale.

---

**Note:** For details on calibrating the measurement scale, refer to the *Horizon Rad Station Advanced User’s Guide Part I*.

---

## Troubleshooting display protocols

When using and managing display protocols, you may encounter the following situations:

- “Name Already Being Used” on page 380
- “Cannot Update Display Protocol” on page 381
- “Duplicate Display Protocols Already Exist” on page 381

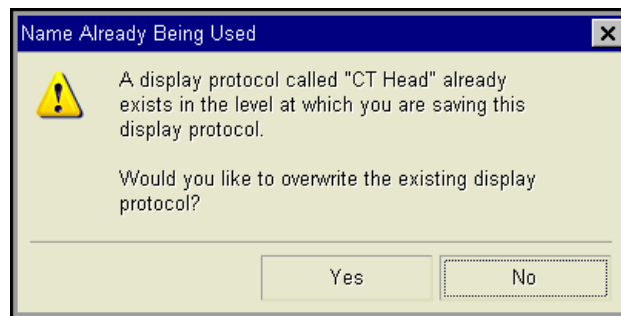
### Name Already Being Used

The **Name Already Being Used** message is displayed when:

- You want to create a display protocol, and
- The display protocol name is the same as an existing display protocol at the same ownership level

For details on ownership levels, see “User, site, and system display protocols” on page 214.

Figure C-3 Name Already Being Used message



Display protocols cannot have duplicate names at the same ownership levels. Do one of the following:

If...	Then...
Overwriting the existing display protocols	Click <b>Yes</b> .
Using another name for the new display protocol	<ol style="list-style-type: none"> <li>1 Click <b>No</b>. The <b>General</b> page of the <b>Save Display Protocol As</b> dialog box is displayed. See <i>Figure 8-2</i> on page 223.</li> <li>2 Enter the new name.</li> <li>3 Click <b>OK</b>.</li> </ol>

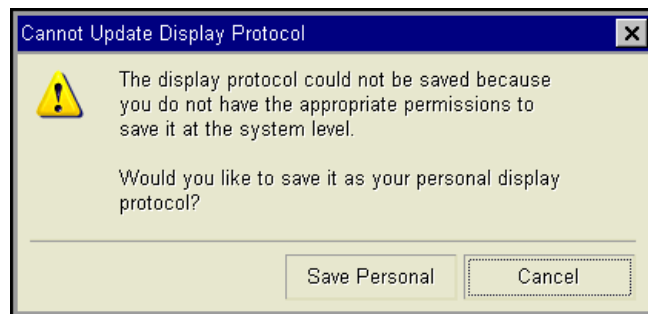
## Cannot Update Display Protocol

The **Cannot Update Display Protocol** message is displayed when:

- You want to modify the layout and presentation of a display protocol, and
- You do not have the authority to save the display protocol at its ownership level

For details on ownership levels, see “[User, site, and system display protocols](#)” on page 214.

Figure C-4 *Cannot Update Display Protocol message*



To save the display protocol as your personal display protocol, click **Save Personal**.

## Duplicate Display Protocols Already Exist

The **Duplicate Display Protocols Already Exist** message is displayed when:

- When you want to copy a display protocol, and
- The name of the display protocol is the same as the name of an existing display protocol in the destination folder(s)

Figure C-5 *Duplicate Display Protocols Already Exist message (when copying to your folder)*

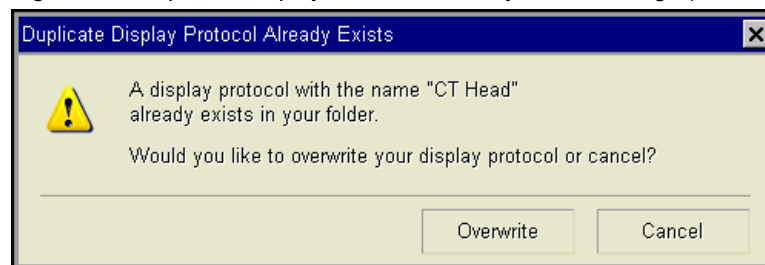
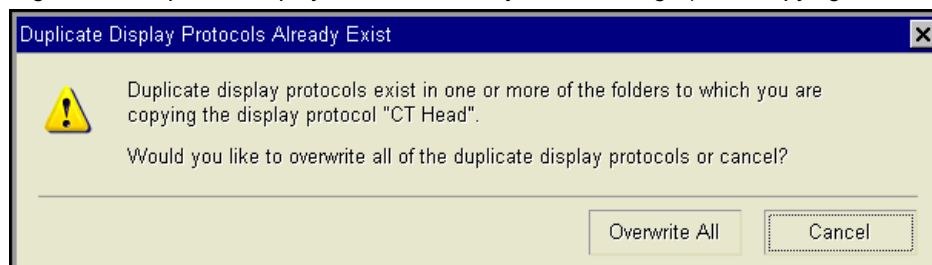


Figure C-6 *Duplicate Display Protocols Already Exist message (when copying to other folders)*



Display protocols cannot have duplicate names in the same folder. Do one of the following:

<b>If...</b>	<b>Then...</b>
Overwriting the duplicate display protocols	Click <b>Overwrite All</b> .
Cancel copying the display protocol	Click <b>Cancel</b> .

## Troubleshooting shortcuts

When working with **user** or **site** shortcuts, you may encounter the following situations:

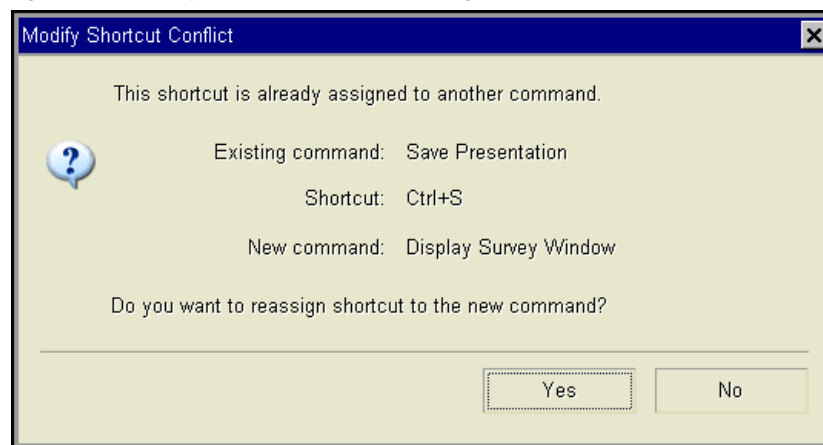
- “The **Modify Shortcut Conflict message is displayed**” on page 383
- “The **Restore Shortcut Conflict message is displayed**” on page 383

### The Modify Shortcut Conflict message is displayed

The **Modify Shortcut Conflict** message is displayed when:

- You want to add or modify a shortcut, and
- The shortcut is already assigned to another command

Figure C-7 Modify Shortcut Conflict message



A shortcut cannot be assigned to multiple commands. Do one of the following:

If...	Then...
Reassigning the shortcut to the new command	Click <b>Yes</b> . The shortcut is removed from the existing command.
Assigning another shortcut to the new command	Click <b>No</b> . Then repeat the steps to add or modify the shortcut.

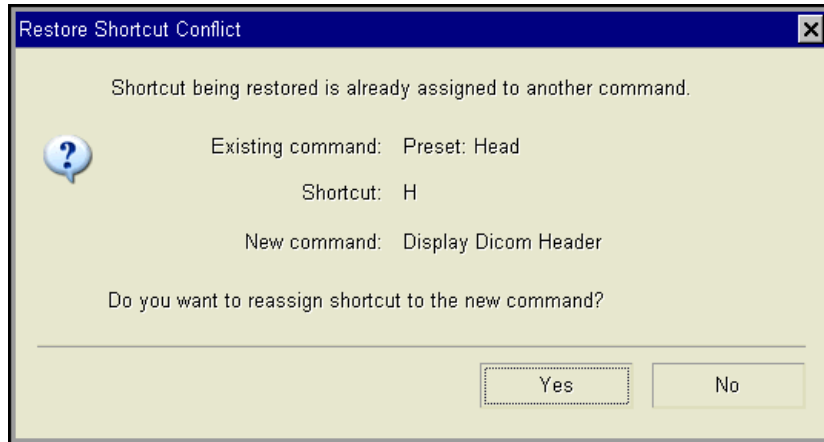
### The Restore Shortcut Conflict message is displayed

The **Modify Shortcut Conflict** message is displayed when:

- You want to restore a shortcut, and
- The shortcut is already assigned to another command



Figure C-8 Restore Shortcut Conflict message



A shortcut cannot be assigned to multiple commands. Do one of the following:

If...	Then...
Reassigning the shortcut to the new command	Click <b>Yes</b> . The shortcut is removed from the existing command.
Assigning another shortcut to the new command	Click <b>No</b> .

## Troubleshooting study status modification

When **changing study status** and **closing a study**, you may encounter the following situation:

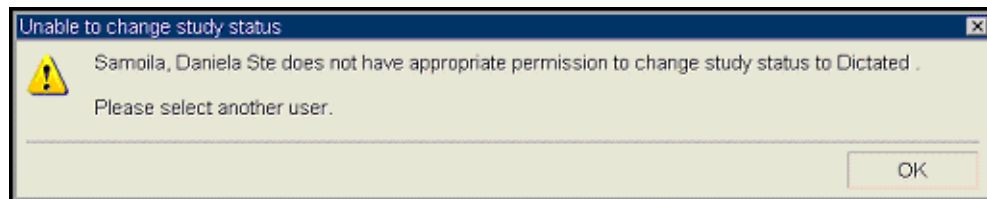
- “The Unable to change study status message is displayed” on page 385

### The Unable to change study status message is displayed

The **Unable to change study status** message is displayed when:

- You want to change the **study status** to **Performed**, **Needs Over-Read**, or **Reviewed**, and
- The logged-on user does not have the authority to change the study status to the specified status

Figure C-9 Unable to change study status message



Do the following:

- 1 Click **OK**.

The **Confirm Identity for Status Change to** dialog box is displayed. See [Figure 10-2](#) on page 321.

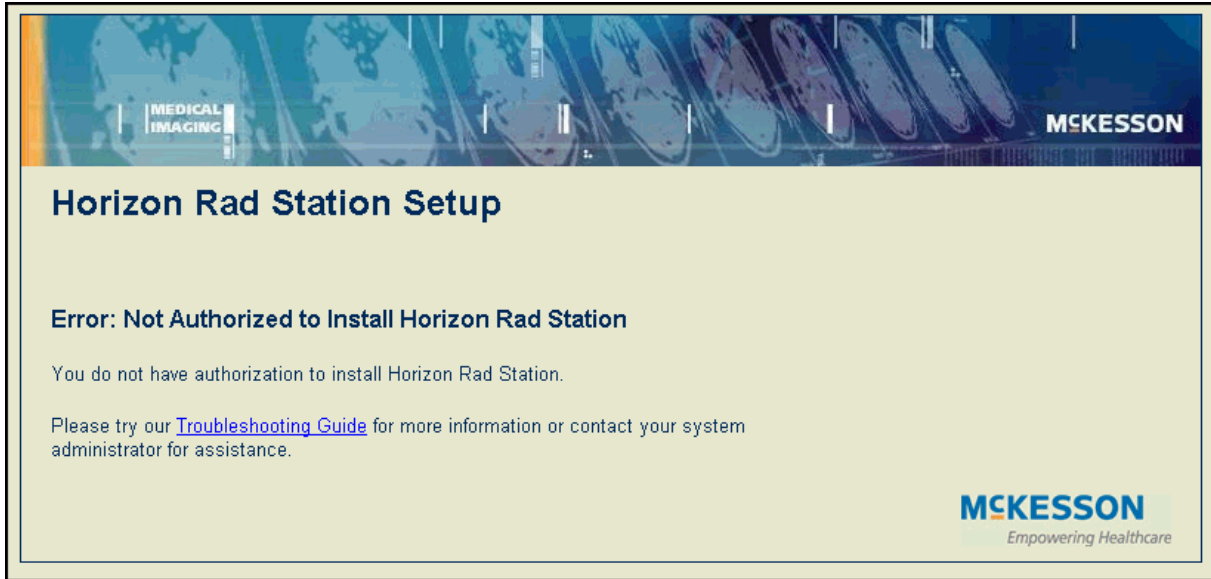
- 2 Confirm your identity as follows:
  - Enter the **User Name**.
  - Enter the **Password**. The password is case sensitive.
  - Click **OK**.

If the **Unable to change study status** message is still displayed, you do not have the authority to change the study status to the one specified. Click **OK**, and find an authorized user to perform this step.

## Troubleshooting installing Horizon Rad Station

When installing Horizon Rad Station, an error message is displayed on the Horizon Rad Station Setup page.

Figure C-10 Error message displayed on Horizon Rad Station Setup page



Do the following:

- 1 Review the error message.

If this message is displayed...	Then...
Not authorized to install Horizon Rad Station.	Ensure that you have the authority to install Horizon Rad Station: <ul style="list-style-type: none"> <li>• If you are using Windows® 2000 Professional or XP Professional, you need to be a member of the Windows® Administrators or Power Users group</li> <li>• If you are using Windows® XP Home, you need to be a member of the Windows® Administrators group.</li> </ul>
The third-party download manager you have installed is causing the installation to fail.	Disable or override any third-party <b>download manager</b> software you may have installed on your computer.  For details, refer to the documentation provided by the download manager manufacturer.

- 2 Reinstall Horizon Rad Station. See “[Troubleshooting installing Horizon Rad Station](#)” on page 386.

## Troubleshooting starting Horizon Rad Station

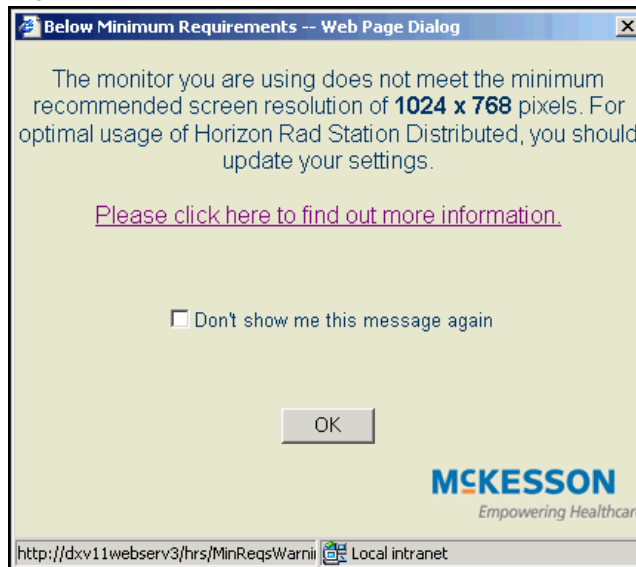
When starting Horizon Rad Station, you may find the following situations:

- “The Screen Resolution Below Minimum Requirements message is displayed” on page 387
- “The Color Depth Below Minimum Requirements message is displayed” on page 389
- “An error is displayed on the Horizon Rad Station Login page” on page 390
- “The Horizon Rad Station Change your password page is displayed” on page 392
- “The Previous session has expired message is displayed” on page 393

### The Screen Resolution Below Minimum Requirements message is displayed

The **Screen Resolution Below Minimum Requirements** message is displayed when the monitor **screen resolution** is set below the minimum requirements. See “**System requirements for Horizon Rad Station**” on page 12.

Figure C-11 Screen Resolution Below Minimum Requirements message



Do the following:

- 1 In the message that is displayed, click **OK**.
- 2 On the Microsoft® Windows® taskbar, click the **Start** button at the bottom left corner of the screen.



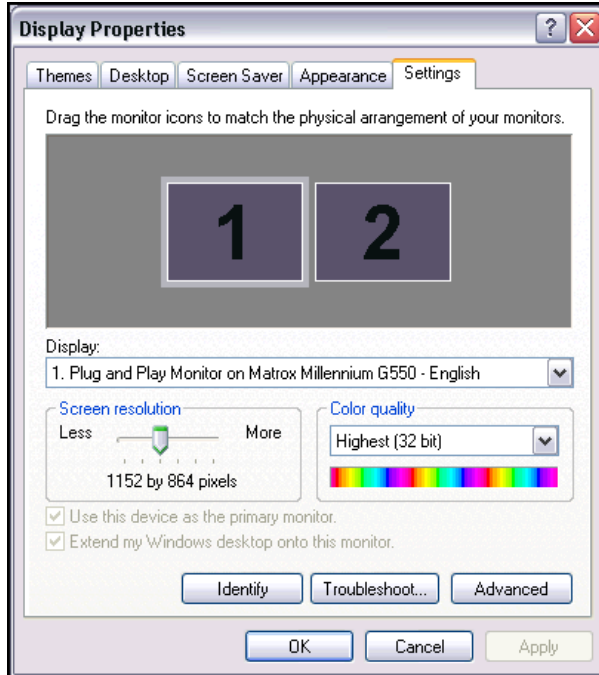
**Note:** If the taskbar is not displayed, follow the instructions provided with the Microsoft® Windows® software to display it.

- 3 Point to **Settings**, click **Control Panel**, and then double-click the **Display** icon.



The **Display Properties** dialog box is displayed.

Figure C-12 Settings in Display Protocols dialog box



- 4 Click the **Settings** tab.
- 5 Move the **Screen resolution** slider to adjust the display resolution:
  - To the right to increase the number of pixels (maximum 1600 by 1200)
  - To the left to decrease the number of pixels (minimum 1024 by 768)

The screen resolution values are displayed below the slider.

---

**Note:** If you are using Windows<sup>®</sup> 2000, the slider is located under **Screen area**.

- 6 Click **OK**.

The display turns on and off while the screen resolution is adjusted.

---

**Note:** If you are using Windows<sup>®</sup> 2000, a message is displayed informing you that that the display may flicker while the screen resolution is adjusted. The message also informs you that the original settings will be retained if the new settings are not applied within 15 seconds. Click **OK**.

When the adjustment is completed, a message is displayed asking if you want to keep the adjusted settings.

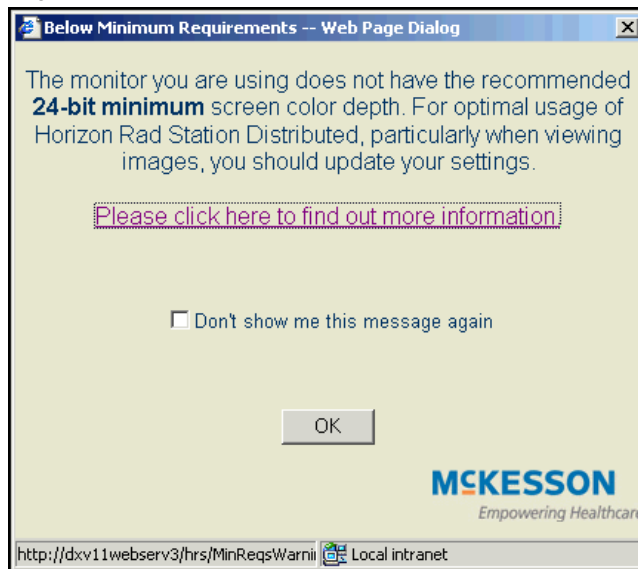
- 7 Click **Yes**. The screen resolution is adjusted.

- 8 Restart Horizon Rad Station. See “Starting and Exiting Horizon Rad Station” on page 9.

### The Color Depth Below Minimum Requirements message is displayed

The **Color Depth Below Minimum Requirements** message is displayed when the **color depth** for the monitor you are using is set below the minimum requirement of 24 bit color.

Figure C-13 Color Depth Below Minimum Requirements error message



Provided the monitor meets the minimum display requirements, you can adjust the color depth. See “System requirements for Horizon Rad Station” on page 12.

Do the following:

- 1 Click **OK**.
- 2 Follow steps 2 to 4 of “The Screen Resolution Below Minimum Requirements message is displayed” on page 387.
- 3 Adjust the color depth as follows:

If...	Then...
Using Microsoft® Windows® 2000	<ol style="list-style-type: none"> <li>1 Click the <b>Colors</b> box.</li> <li>2 Select one of the following options: <ul style="list-style-type: none"> <li>- <b>True Color (24 bit)</b> (minimum)</li> <li>- <b>True Color (32 bit)</b> (recommended)</li> </ul> </li> </ol>

If...	Then... (Continued)
Using Microsoft® Windows® XP	<ol style="list-style-type: none"> <li>1 Click the <b>Color Quality</b> box.</li> <li>2 Select one of the following options:                             <ul style="list-style-type: none"> <li>- <b>High (24 bit)</b> (minimum)</li> <li>- <b>Highest (32 bit)</b> (recommended)</li> </ul> </li> </ol>

- 4 Click **OK**.
- 5 In the message that is displayed, click **OK**. The display turns on and off while the color depth is adjusted.

**Note:** If you are using Windows® 2000, a message is displayed informing you that that the display may flicker while the color depth adjusted. The message also informs you that the original settings will be retained if the new settings are not applied within 15 seconds. Click **OK**.

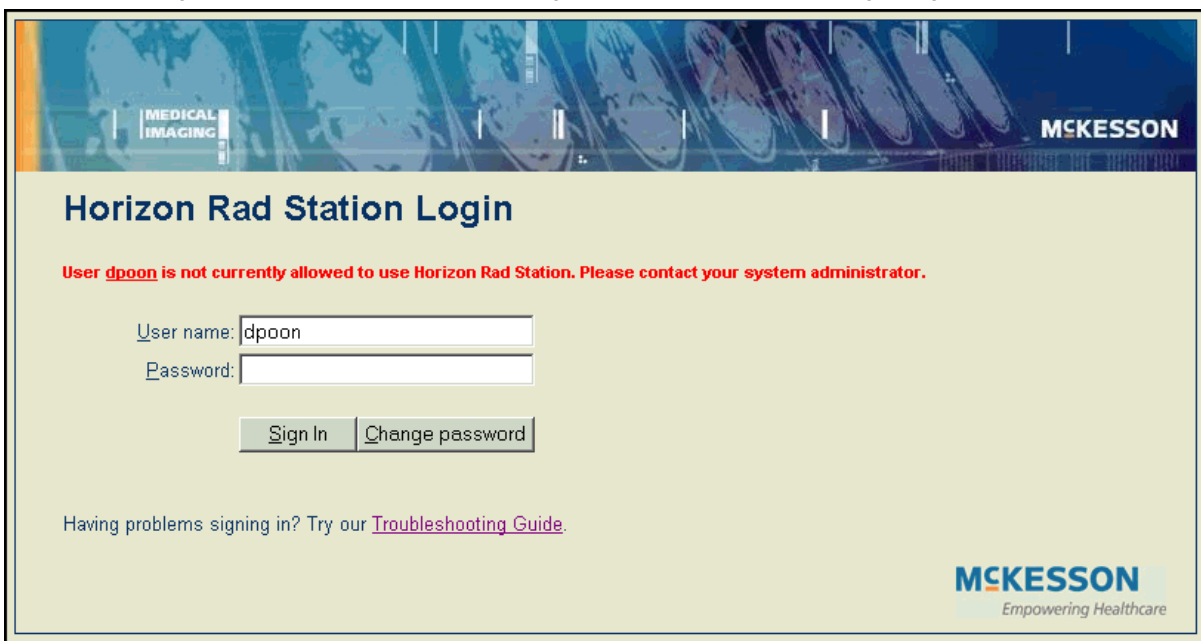
When the adjustment is complete, a message is displayed asking if you want to keep the adjusted settings.

- 6 Click **Yes**. The color depth is adjusted.
- 7 Restart Horizon Rad Station. See [“Starting and Exiting Horizon Rad Station”](#) on page 9.

### An error is displayed on the Horizon Rad Station Login page

When logging on to Horizon Rad Station an error message is displayed on the Horizon Rad Station Login page.

Figure C-14 Example of error message on Horizon Rad Station Login page



Review the error message.

If this message is displayed...	Then...
The Web server is currently unavailable. Please try again later, or contact your system administrator of the problem persists.	The Horizon Rad Station application cannot be started because of a system failure. <ul style="list-style-type: none"> <li>• Close the Horizon Rad Station Login page, and then start Horizon Rad Station again after a few minutes.</li> </ul>
User is not currently allowed to use Horizon Rad Station. Please contact your system administrator.	Horizon Rad Station does not recognize the user name you specified. Do any of the following: <ul style="list-style-type: none"> <li>• In the <b>User Name</b> box, verify that you typed the user name correctly. Retype the name if necessary.</li> <li>• Contact your local system administrator to make sure that your user name is configured correctly.</li> </ul>
The user name and password combination you have entered is incorrect. Please try again.	Horizon Rad Station cannot match the user name to the password you specified. Do the following: <ul style="list-style-type: none"> <li>• In the <b>User Name</b> box, make sure that you specified the correct user name. Retype the name if necessary.</li> <li>• In the <b>Password</b> box, retype the password.</li> </ul>

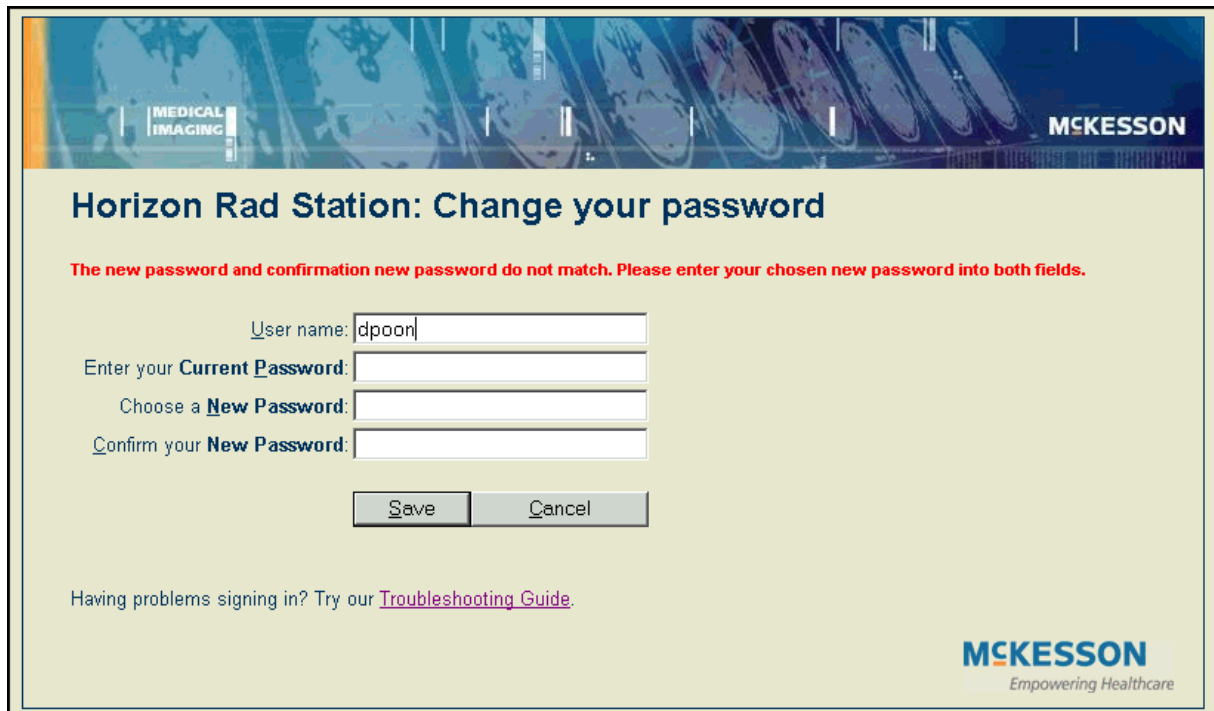
**Note:** If the problem persists, contact your local system administrator.



## The Horizon Rad Station Change your password page is displayed

When typing your password in the Horizon Rad Station Login page, an error message is displayed on the Change your password page. See *Figure C-15* on page 392.

Figure C-15 Error message on Change your password page



Review the error message.

Message	Meaning
Your password has expired. Please choose a new one.	The security at your site is configured so that you need to change your password after a specified time period.
The new password and confirmation new password do not match. Please enter your new password into both fields.	The password you typed in the <b>Confirm your new password</b> box does not match the new password you specified.
The new password you have entered is not valid. Please choose another new password.	The security at your site may be configured to recognize certain password complexity requirements. For example, a password may contain no more than 10 alphanumeric characters.  <b>Note:</b> Complexity requirements for passwords vary from one site to another. Contact your local system administrator for details.

To change your password:

- 1 In the **User name** box, type your user name.
- 2 In the **Enter your Current Password** box, type your current password.
- 3 In the **Choose a New Password** box, type a new password.

---

**Note:** Specific password complexity requirements may be configured for your site. Please contact your local system administrator for details.

---

- 4 In the **Confirm your New Password** box, retype your new password.
- 5 Click **OK**.

A message is displayed, informing you that password has been changed.

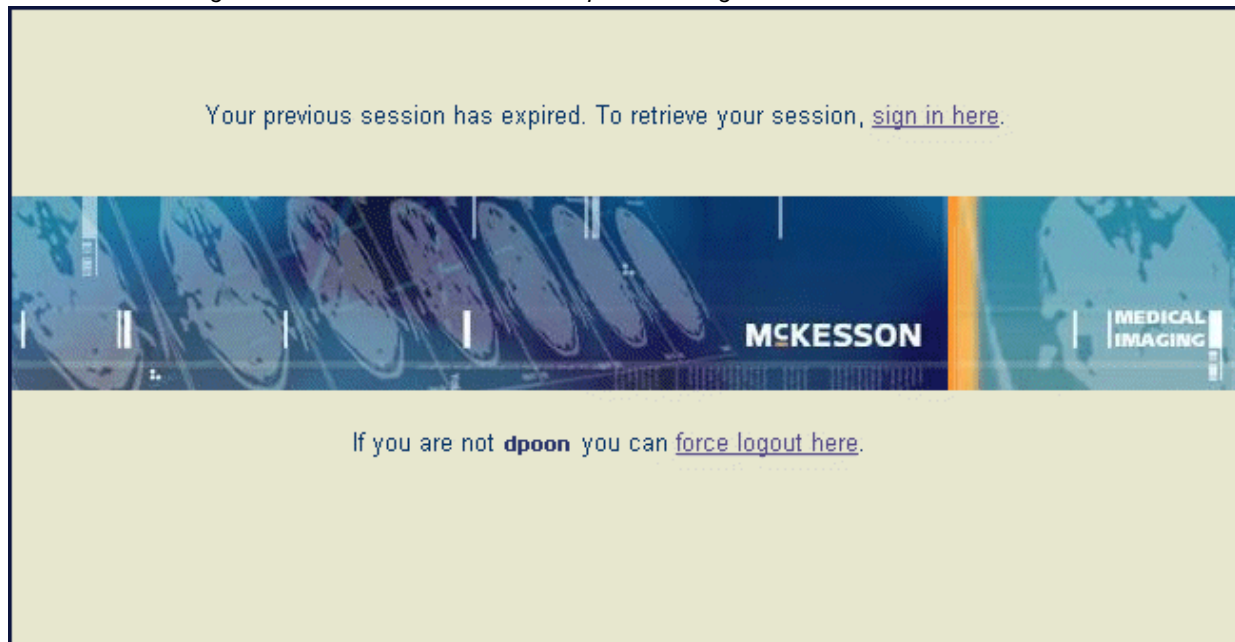
- 6 Click **Continue sign-in**.

The Horizon Rad Station Login page is displayed. See “[Installing Horizon Rad Station](#)” on page 5.

### The Previous session has expired message is displayed

When returning to the workstation after a certain time period, the Previous session has expired message is displayed.

Figure C-16 Previous session has expired message



If there is no user interaction during a specified period of time, the Horizon Rad Station session expires, without exiting the application. After a session has expired, you can resume your work by retrieving the expired session.

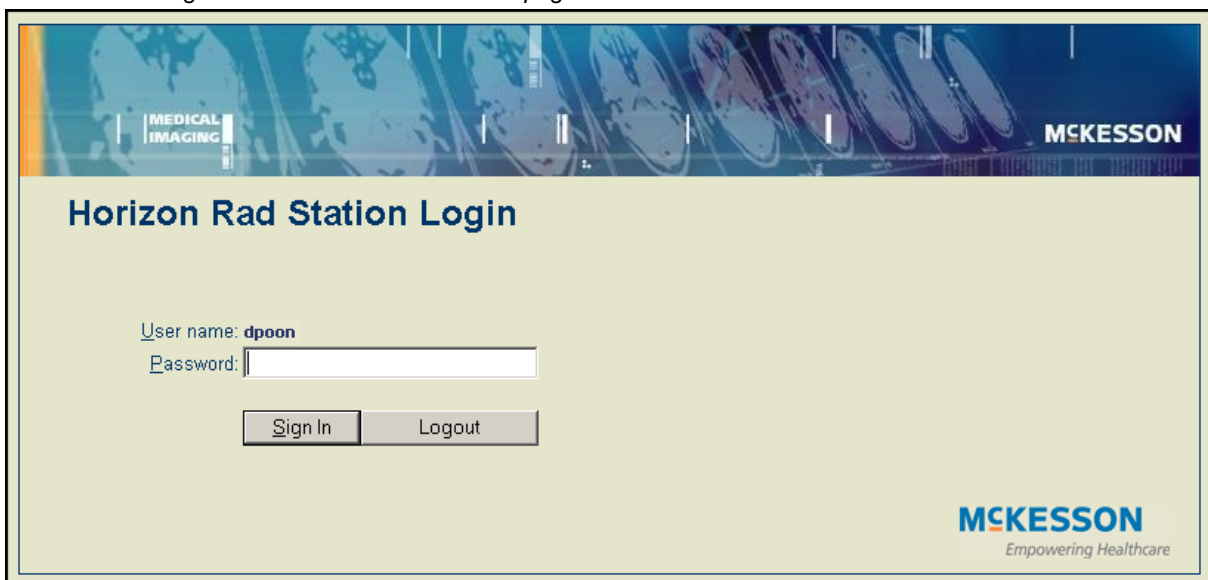
You also have the option to quit Horizon Rad Station, and then restart Horizon Rad Station. See “[Starting and Exiting Horizon Rad Station](#)” on page 9.

To retrieve the Horizon Rad Station session:

- Click a link as follows:

If...	Then...
Retrieving the previous session using the same Horizon Rad Station user name	<ol style="list-style-type: none"> <li>1 Click <b>sign in here</b> link. The Horizon Rad Station Login page is displayed, displaying the name of the user currently logged on. See <i>Figure C-17</i>.</li> <li>2 In the <b>Password</b> box, type your Horizon Rad Station password. The Horizon Rad Station session is retrieved.</li> <li>3 Click <b>Sign In</b>.</li> </ol> <hr/> <p><b>Note:</b> If you want to exit Horizon Rad Station instead, click <b>Logout</b>.</p> <hr/>
Exiting and restarting Horizon Rad Station using a different Horizon Rad Station user name	<ol style="list-style-type: none"> <li>1 Click the <b>force logout here</b> link. The Horizon Rad Station Login page is displayed. See <i>Figure 1-9</i> on page 9.</li> <li>2 Start Horizon Rad Station. Follow the steps in “Starting and Exiting Horizon Rad Station” on page 9</li> </ol>

Figure C-17 Reauthenticate user page

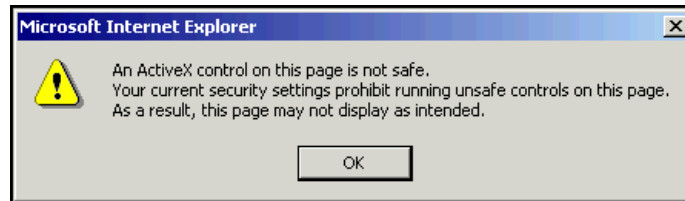


## Troubleshooting Microsoft® Internet Explorer error messages

Horizon Rad Station requires runs certain scripts and ActiveX® controls on your computer, during the installation and while you are using the application.

Depending on the **Web browser** security settings, messages may be displayed whenever Horizon Rad Station runs an ActiveX® control or script. Other messages may inform you that controls and scripts cannot be run on your computer.

Figure C-18 Example of Microsoft® Internet Explorer error message



To avoid these messages, you can change the security settings in Microsoft® Internet Explorer.

Do the following:

- 1 On the Microsoft® Internet Explorer menu bar, click **Tools**, and then select **Internet Options**.

The **Internet Options** dialog box is displayed.

- 2 Click the **Security** tab.

The Security page is displayed.

- 3 Click **Custom Level**.

The **Security Settings** dialog box is displayed.

- 4 In the **Settings** box, set the security as follows:

If this message is displayed...	Then...
Scripts are usually safe. Do you want to allow scripts to run?	<ol style="list-style-type: none"> <li>1 Click <b>Yes</b>.</li> <li>2 Scroll to the <b>Scripting</b> main heading, and then scroll to the <b>Active Scripting</b> subheading.</li> <li>3 Select <b>Enable</b>.</li> </ol> <p>The message is no longer displayed.</p>

If this message is displayed...	Then...
<p>Your current security settings prohibit running ActiveX® controls on this page. As a result, the page may not display correctly.</p>	<ol style="list-style-type: none"> <li>1 Click <b>OK</b>.</li> <li>2 Scroll to the <b>ActiveX® controls and plug-ins</b> main heading, and then scroll to the <b>Download signed ActiveX controls</b> subheading.</li> <li>3 Select <b>Enable</b>.</li> </ol> <p>The message is no longer displayed.</p>
<p>Do you want to allow software such as ActiveX® controls and plug-ins to run?</p>	<ol style="list-style-type: none"> <li>1 Click <b>Yes</b>.</li> <li>2 Scroll to the <b>Run ActiveX® controls and plug-ins</b> main heading.</li> <li>3 Select <b>Enable</b>.</li> </ol> <p>The message is no longer displayed.</p>
<p>A script is accessing some software (an ActiveX® control) on this page which has been marked safe for scripting. Do you want to allow this?</p> <p>- or -</p> <p>An ActiveX® control on this page is not safe. Your current security settings prohibit running unsafe controls on this page. As a result, this page may not display as intended.</p>	<ol style="list-style-type: none"> <li>1 Click <b>Yes</b>.</li> <li>2 Scroll to the <b>Script ActiveX® controls marked safe for scripting</b> main heading.</li> <li>3 Select <b>Enable</b>.</li> </ol> <p>The message is no longer displayed.</p>
<p><b>Security warning</b> dialog box.</p> <p>Do you want to install and run Setup.cab signed and distributed by McKesson corporation?</p>	<ol style="list-style-type: none"> <li>1 To ensure that the message is not displayed each time you install Horizon Rad Station, select <b>Always trust content from McKesson Corporation</b>.</li> <li>2 Click <b>Yes</b>.</li> </ol>

- 5 Continue to install or start Horizon Rad Station. See [“Installing Horizon Rad Station”](#) on page 5 or [“Starting and Exiting Horizon Rad Station”](#) on page 9.

## Appendix D - Accessing Horizon Rad Station through an EMR application

Horizon Rad Station Distributed can be used together with an [Electronic Medical Record \(EMR\) application](#). This section describes how to open studies in Horizon Rad Station Distributed from an EMR application.

### In this section

This section contains the following topics:

Topic	See page
<a href="#">Features of the EMR Integration option</a>	398
<a href="#">EMR Integration option work area</a>	400
<a href="#">Opening studies from the EMR application</a>	403
<a href="#">Messages that may be displayed when opening a study from the EMR application</a>	408
<a href="#">Returning to the EMR application</a>	410

## Features of the EMR Integration option

The EMR integration option enables you to launch Horizon Rad Station from an open patient record in the [EMR application](#).

The following table describes the tasks you can perform in Horizon Rad Station when you open a study from an [EMR application](#).

Task	Description
Opening studies from Horizon Rad Station	<p>You can:</p> <ul style="list-style-type: none"> <li>Open a single study from an open patient record in the EMR application. See <a href="#">“Opening studies from the EMR application”</a> on page 403.</li> <li>Open other studies for the same patient. See <a href="#">“Opening additional studies for the same patient”</a> on page 36.</li> </ul>
Viewing studies	<p>View images of the open study. See <a href="#">“Working with series”</a> on page 43. You can:</p> <ul style="list-style-type: none"> <li>Display series in viewports. See <a href="#">“Displaying series”</a> on page 44.</li> <li>Scroll through a series to review its images. See <a href="#">“Navigating a series”</a> on page 54.</li> <li>Quickly page through series, without manually displaying the series one-by-one. See <a href="#">“Cycling series”</a> on page 57.</li> <li>Change the study and series layout. See <a href="#">“Setting screen and viewport layout”</a> on page 62.</li> <li>Scroll through multiple series simultaneously. See <a href="#">“Working with linked series”</a> on page 64.</li> </ul>
Manipulating images	<p>Modify images using the Horizon Rad Station image manipulation tools. See <a href="#">“Working with images”</a> on page 73.</p>
Setting image compression	<p>Specify image compression for:</p> <ul style="list-style-type: none"> <li>The open study. See <a href="#">“Changing image compression”</a> on page 137.</li> <li>All studies of a certain modality. See <a href="#">“Image compression preferences”</a> on page 295.</li> </ul>
Working with display protocols	<p>Use and manage display protocols to display studies. See <a href="#">“Working with display protocols”</a> on page 211.</p>
Setting preferences	<p>Set user preferences in Horizon Rad Station. See <a href="#">“Setting the Horizon Rad Station preferences”</a> on page 285.</p>

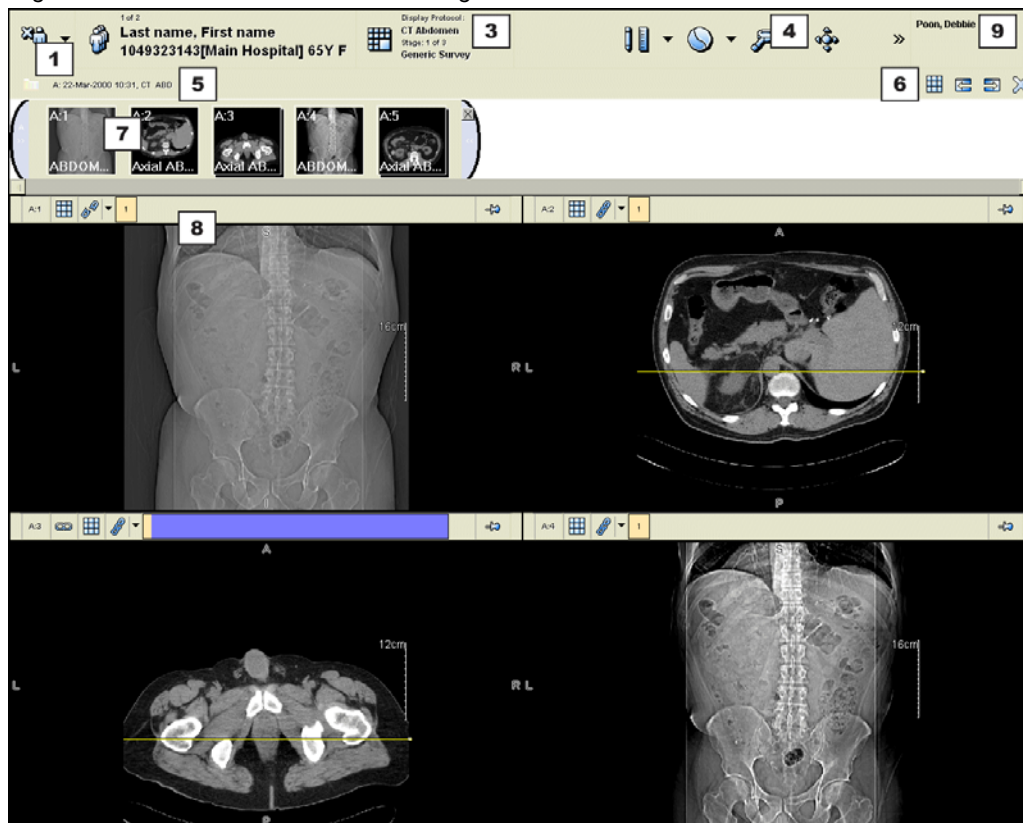
Task	Description (Continued)
Viewing patient information and documents	<p>Use the Patient Portfolio to access the following information and documentation:</p> <ul style="list-style-type: none"> <li>• Patient information. See <a href="#">“Viewing patient information”</a> on page 201.</li> <li>• Study information. See <a href="#">“Viewing study information”</a> on page 203.</li> <li>• Reports. See <a href="#">“Viewing and printing reports”</a> on page 205.</li> <li>• Voice clips. See <a href="#">“Playing voice clips”</a> on page 208.</li> <li>• Scanned documents. See <a href="#">“Viewing scanned documents”</a> on page 209.</li> </ul> <hr/> <p><b>Note:</b> Depending on the configuration at your site, the Patient Portfolio may not be available. For details, contact McKesson Medical Imaging Group.</p>
Exiting Horizon Rad Station.	Exit Horizon Rad Station and return to the EMR application. See <a href="#">“Returning to the EMR application”</a> on page 410.



## EMR Integration option work area

The Horizon Rad Station work area provides quick access to the images associated with an open study. It enables you to change study, series, and image layout. You can also access the image manipulation tools from the work area. *Figure D-1.*

Figure D-1 Horizon Rad Station EMR Integration work area



### Horizon Rad Station EMR Integration work area components

The following table lists the components of the Horizon Rad Station work area, when accessed from an EMR application. The numbers indicate the location of the components.

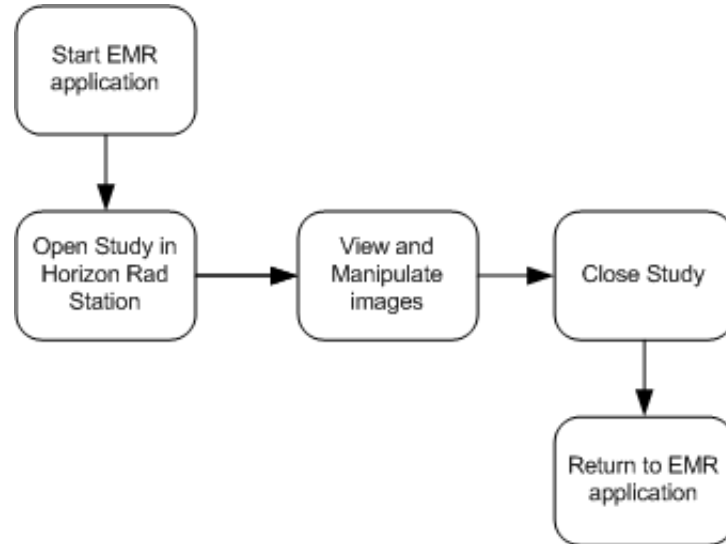
Component	Description
1 Close study icon	Closes all studies belonging to the patient. See <a href="#">“Closing studies”</a> on page 330.
2 Patient Identification button	Displays information about the patient whose study you are currently viewing. See <a href="#">“Patient Identification button”</a> on page 340.
3 Display Protocol button	Displays information about the <a href="#">display protocol</a> applied to the study. See <a href="#">“Display Protocol button”</a> on page 342.

Component	Description (Continued)
4 Main toolbar	Displays a collection of icons. Each icon represents a feature of Horizon Rad Station. See <a href="#">“Using the main toolbar”</a> on page 346.
5 Study Information bar	Displays information about the study. See <a href="#">“Study Information bar”</a> on page 343.
6 Study toolbar	Displays the icons for setting the screen layout and navigating studies. See <a href="#">“Study toolbar”</a> on page 345.
7 Thumbnail toolbar	<p>Provides an overview of each open study. The thumbnail toolbar indicates:</p> <ul style="list-style-type: none"> <li>• The number of <a href="#">series</a> in the study</li> <li>• The types of images in the series</li> <li>• The number of flagged images in the study</li> <li>• Whether the study contain <a href="#">patient documentation</a> (reports, audio messages, scanned documents, and/or diagrams)</li> </ul> <p>See <a href="#">“Using the Thumbnail toolbar”</a> on page 349.</p>
8 Viewport	Enables you to view and manipulate images in a series. See <a href="#">“Understanding viewports”</a> on page 354.
9 Logged-on user	Displays the name of the user who is logged on to Horizon Rad Station.

## Horizon Rad Station EMR Integration workflow

Figure D-2 illustrates a typical workflow in Horizon Rad Station when integrated with an EMR application.

Figure D-2 A typical workflow

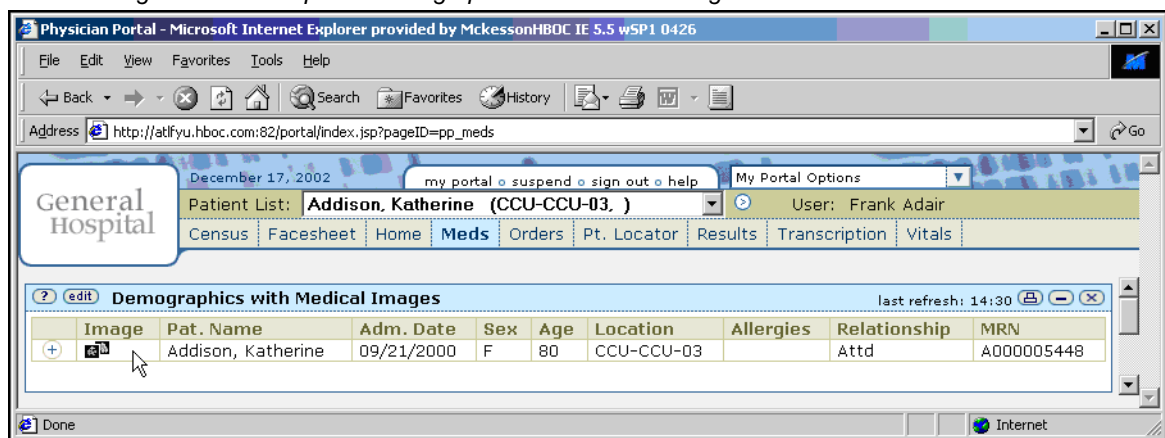


## Opening studies from the EMR application

To view study images in Horizon Rad Station, you need to access the study from the patient record in your **EMR application**. For example, if you are using the Horizon<sup>WP</sup> Physician Portal, you can access Horizon Rad Station from the Demographics with Medical Images, Orders, or Results modules. See “**Horizon<sup>WP</sup> Physician Portal modules**” on page 403.

**Note:** Horizon<sup>WP</sup> Physician Portal modules can be customized specifically for your site. The names of the Horizon<sup>WP</sup> Physician Portal modules referred to in this section may not correspond with the names used at your site. For details, contact your local system administrator.

Figure D-3 Example of Demographics with Medical Images module



### Horizon<sup>WP</sup> Physician Portal modules

The following table describes the Horizon<sup>WP</sup> Physician Portal modules from where Horizon Rad Station can be launched.

Module	Description
Demographics with Medical Images	Displays patient information for a selected patient.
Orders Selection	Lists the orders for a selected patient. You can filter the order list by order status, order group, and encounter or time period.
Results Viewer	Lists the test results for patient orders. The test results show the most recent results for each selected test. You can also search for order results by department and date range.

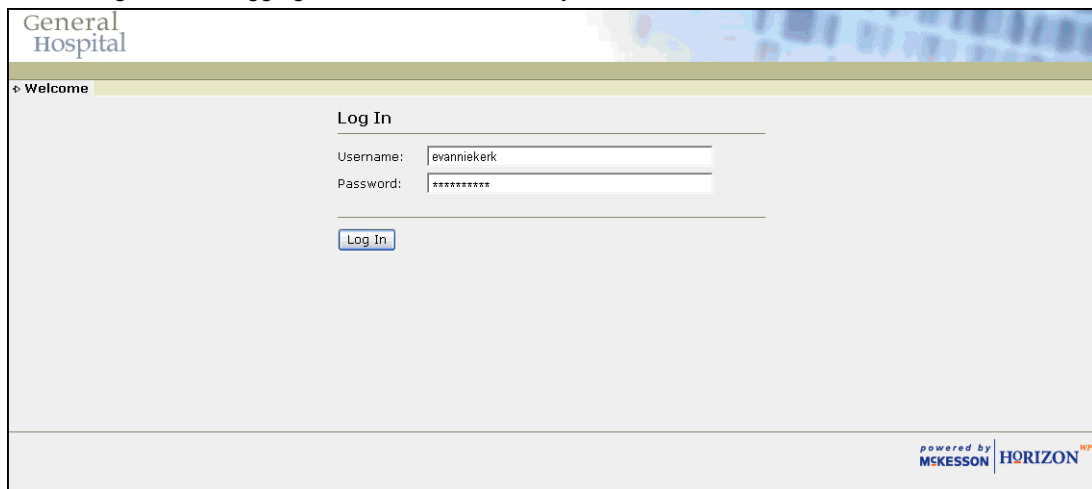
**Note:** Typically, Horizon<sup>WP</sup> Physician Portal modules are customized specifically for your site. For example, the names of the Horizon<sup>WP</sup> Physician Portal modules referred to in this section may not correspond with the names used at your site. For details, contact your local system administrator.

## Steps for this task

To start Horizon Rad Station from an EMR application:

- 1 Log on to the EMR application. If you are using the Horizon<sup>WP</sup> Physician Portal, complete the following steps:
  - Type your Horizon<sup>WP</sup> Physician Portal user name and password.
  - Click **Login**.

Figure D-4 Logging on to the Horizon<sup>WP</sup> Physician Portal



The screenshot shows the login interface for the Horizon<sup>WP</sup> Physician Portal. At the top left, it says "General Hospital". Below that is a "Welcome" message. The main section is titled "Log In" and contains two input fields: "Username:" with the text "evanniekerk" and "Password:" with "\*\*\*\*\*". Below the fields is a "Log In" button. In the bottom right corner, there is a logo that says "powered by MCKESSON | HORIZON<sup>WP</sup>".

The EMR application is launched. For example, see *Figure D-3* on page 403.

- 2 In the patient's Electronic Medical Record, click the appropriate icon to launch Horizon Rad Station. For example, if you are using the Horizon<sup>WP</sup> Physician Portal, click the appropriate icon in the **Image** column. See "[Horizon Physician Portal Image column icons](#)" on page 406.



If you are accessing Horizon Rad Station for the first time during this session, the **Horizon Login** dialog box is displayed. See *Figure D-5*.

**Note:** Depending on the configuration at your site, the Sign In window may not be displayed.

The final HIPAA Security Rule (68FR8334) requires a unique user identification and a mechanism for the authentication of the person or entity of this unique user identification for access to protected health information. McKesson Medical Imaging Group fulfills this requirement through User ID and Password login. Customers proposing to set Secondary Login to OFF should be aware that such action is not compliant with the final HIPAA Security Rule.

Please contact your local system administrator for details.

Figure D-5 Horizon Login dialog box



- 3 In the **Sign In** dialog box, type your Horizon Medical Imaging™ password, and then click **Sign In**.

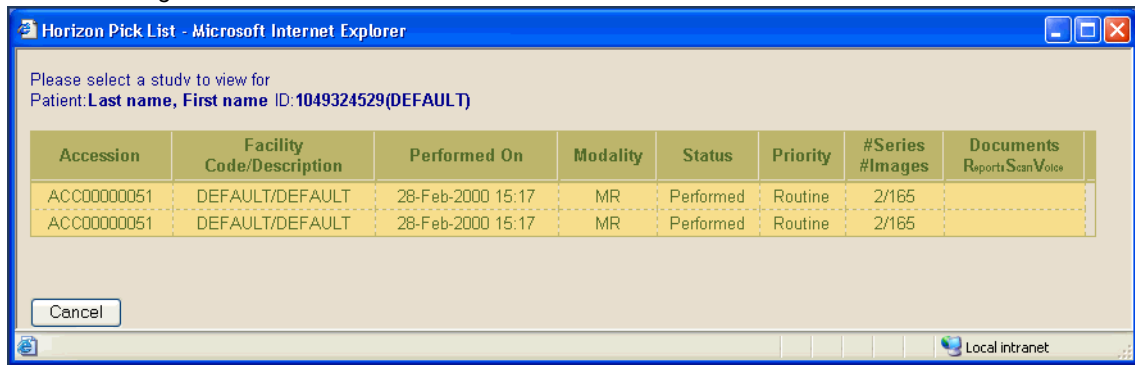
**Note:** If a message is displayed, see [“Messages that may be displayed when opening a study from the EMR application”](#) on page 408.

4 Do the following:

If...	Then...
The <b>Horizon Pick List</b> is displayed	Double-click the study you want to open.  The study is displayed in Horizon Rad Station.
The <b>Horizon Pick List</b> is not displayed	The study is displayed in Horizon Rad Station.  View the images. See <a href="#">"Viewing images"</a> on page 77.

**Note:** The **Horizon Pick List** is displayed under specific circumstances. See ["When is the Horizon Pick List displayed"](#) on page 407.




Figure D-6 Horizon Pick List



### Horizon Physician Portal Image column icons

Typically, Horizon<sup>WP</sup> Physician Portal modules are customized specifically for your site. Therefore, the module names and **Image** column icons may be different for each site.

The following table provides examples of the Horizon<sup>WP</sup> Physician Portal **Image** column icons you may encounter.

Icon	Function
	Start Horizon Rad Station from the Demographics with Medical Images module.
	Start Horizon Rad Station from the Orders Selection module.
	Start Horizon Rad Station from the Results Viewer module.

## When is the Horizon Pick List displayed

If there is any ambiguity regarding which study you are opening, the **Horizon Pick List** is displayed. For example, the following situations may occur:

- The Electronic Medical Record from where you are opening the study does not provide study details. For example, the Patient Demographics with Images module in Horizon<sup>WP</sup> Physician Portal provides patient information only.
- The Electronic Medical Record from where you are opening the study does not specify an **Accession Number** for the requested study.
- The requested study is associated with multiple accession numbers.

---

**Note:** If the Horizon Pick List is not displayed, the study immediately opens in Horizon Rad Station.

---



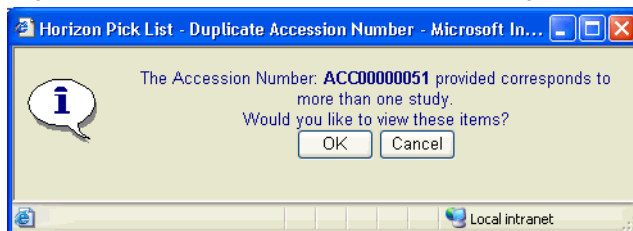
## Messages that may be displayed when opening a study from the EMR application

When study images cannot be viewed in Horizon Rad Station from the **EMR application**, messages are displayed to alert you or inform you of possible actions.

### Duplicate Accession Number message is displayed

The **Duplicate Accession Number** message is displayed when the accession number for a specific patient record matches multiple studies in the Horizon Medical Imaging™ database.

Figure D-7 Duplicate Accession Number message



Do one of the following:

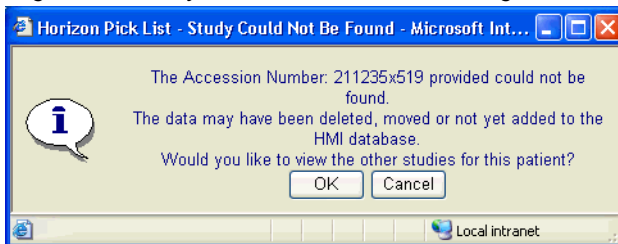
If...	Then...
You want to select a study to display in Horizon Rad Station	<ol style="list-style-type: none"> <li>1 Click <b>OK</b>. The Pick list is displayed. See <i>Figure D-6</i> on page 406.</li> <li>2 Double-click the study you want to open. The study is displayed in Horizon Rad Station.</li> </ol>
You want to return to the patient record in the EMR application	Click <b>Cancel</b> . The patient record is displayed EMR application.

### Study Could Not Be Found message is displayed

The **Study Could Not Be Found** message is displayed when:

- No Patient ID is specified in the patient record.
- The accession number specified in the patient record does not match any study in the Horizon Medical Imaging™ database.

Figure D-8 Study Could Not Be Found message



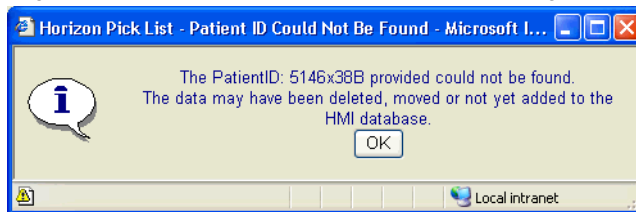
Do one of the following:

If...	Then...
You want to select a study to display in Horizon Rad Station	<ol style="list-style-type: none"> <li>1 Click <b>OK</b>. The Pick list is displayed. See <i>Figure D-6</i> on page 406.</li> <li>2 Double-click the study you want to open. The study is displayed in Horizon Rad Station.</li> </ol>
You want to return to the patient record in the EMR application	Click <b>Cancel</b> .

### Patient ID Could Not Be Found message is displayed

The **Patient ID Could Not Be Found** message is displayed when the accession number and patient ID specified in the patient record do not match any study in the Horizon Medical Imaging™ database.

*Figure D-9 Patient ID Could Not Be Found message*



Click **OK** to return to the EMR application.

## Returning to the EMR application

From an open study in Horizon Rad Station, you can return to the [EMR application](#) by doing one of the following:

- “[Closing a study and returning to the EMR application](#)” on page 410
- “[Exiting Horizon Rad Station and returning to the EMR application](#)” on page 410

### Closing a study and returning to the EMR application

To close a study and return to the EMR application:

- 1 Close the study in Horizon Rad Station. See “[Closing studies](#)” on page 330.

The study is closed.

- 2 At the bottom of the screen, click the taskbar button for the EMR application. For example, click the **Physician Portal** taskbar button



The EMR application window is displayed. For example, see [Figure D-3](#) on page 403.

### Exiting Horizon Rad Station and returning to the EMR application

To exit Horizon Rad Station and return to the EMR application:

- 1 In the open study in Horizon Rad Station, click the **Quit** icon on the main toolbar.



- 2 Follow step 2 of “[Closing a study and returning to the EMR application](#)” on page 410.

# Glossary

This topic defines terms used in the *Horizon Rad Station Distributed User's Guide*.

## **8-bit image**

This digital image can include as many as 256 colors. In this image, 8 bits are allocated for the storage of each pixel.

## **16-bit image**

This digital image can include over 65 000 colors. In this image, 16 bits are allocated for the storage of each pixel.

## **24-bit image**

This digital image can include approximately 16 million colors. In this image, 24 bits are allocated for the storage of each pixel.

## **A+**

When two patients have different names but the same Patient ID, the "A+" prefix is added to the duplicate ID. To retrieve the duplicate patient record you must type the prefix with the ID. The "A+" prefix is added to the beginning of a duplicate ID to alert users of the situation. In addition, the Study list indicates that the associated study contains QA issues. The Patient ID conflict can be resolved using QA Manager.

## **Accession Number**

Unique identification number that a HIS, RIS, or third-party ordering system assigns to a study. Some sites use this number to track patient visits for billing purposes.

## **Administrator**

User role for individuals who manage user accounts and user rights using PACS Admin. They also manage other information for the site, such as procedure types and work group.

## **anchor study**

The first study opened for a particular patient. It is usually the most recent study created for that patient.

## **annotations**

Text, drawings, and drawing with measurements that are added to images. Annotations can be either hidden or displayed.

## **Apple QuickTime**

A video format used in exporting cine clips to removable media.

### **Apple QuickTime Player**

Used to view exported cine clips in the Apple QuickTime format. The Apple QuickTime Player can be downloaded for free from the web site at: <http://www.apple.com/quicktime/>

### **Archive Librarian**

User role for individuals who maintain, clean, and change archive media using Media Manager.

### **ASCII**

The acronym for the American Standard Code for Information Interchange. ASCII is a code for representing English characters as numbers. Most computers use ASCII codes to represent text, making it possible to transfer data from one computer to another. Text files stored in ASCII format are sometimes called ASCII files.

### **AVI**

Stands for Audio Video Interleave. AVI is a video format used in exporting cine clips to removable media. The exported AVI video clip can only end up in one of the two supported compression formats, baseline MJPEG or Windows Video 1. If you choose the Video 1 AVI format the clip can be viewed in Windows Media Player. The MJPEG AVI format and the exported video clip can be viewed in Windows Media Player if the Pegasus MJPEG codec is installed. The Pegasus PICVideo MJPEG codec for Windows can be purchased or evaluated from the Pegasus web site at: <http://www.jpg.com>

### **axial**

A plane that runs parallel to the ground, dividing the body into top and bottom sections.

### **body region**

The part of body that is examined, for example, Skull, Abdomen, and Shoulder. Body regions are associated with procedure types.

### **Bookmark**

A Bookmark saves the display properties of the anchor study and open reference studies. Each Bookmark is associated with the anchor study.

### **CD-R**

Stands for CD-Recordable. A type of write-once-read-many (WORM) optical disks to which images can be exported from a study. Users can only record information onto a CD-R once.

### **CD-RW**

Stands for CD-ReWriteable. A type of rewriteable optical disks to which images can be exported from a study. Users can erase previously recorded information and record new information onto a CD-RW.

**cine clip**

A time-based image that contains a sequence of frames. You can play, trim, and export cine clips.

**Clerk**

User role for individuals who schedule studies, and manage study information and patient records. This category frequently includes Technologists.

**click**

Rest the mouse pointer on an object, such as a toolbar icon, and then click the left mouse button once. Clicking always causes a noticeable action, for example, a button is pressed or an item in a list is highlighted.

**Cobb angle**

The angle between two non-intersecting lines. Cobb angles are used to measure spinal scoliosis.

**collimation**

Refers to slice thickness, a variable used in Computed Tomography (CT) imaging.

**color depth**

Color depth indicates the number of colors that a single pixel can display on a monitor screen. The number of colors can range from 16 (4 bit color) to 4,294,967,295 (32 bit color).

**compression**

A technique used to reduce the size of a file. Compressing images is especially useful if you need more disk space and/or wish to transfer images electronically.

**compression ratio**

A value that shows approximately how much a file has been decreased in size.

**Computed Radiography (CR)**

A radiological imaging modality similar to Digital Radiography (DR) and Digital X-Ray (DX). See "[Digital X-Ray \(DX\)](#)".

**Computed Tomography (CT)**

This imaging modality was developed in the early 1970s. CT is a transverse imaging system that provides cross-sectional views of the body. CT imaging variables include scan time, collimation, slice spacing, algorithm, matrix size, and the use of contrast medium. See also "[collimation](#)" and "[slice spacing](#)".

### **Contrast Allergies**

Any known allergies to substances injected in the patient to increase contrast in radiology images. Contrast Allergies are part of a patient record.

### **coronal**

A plane that runs perpendicular to the ground, dividing the body into front and back sections.

### **cross-sectional imaging**

Digital imaging methods are used to scan sections and slices of the body. This is done in order to gain a better view of the area of interest, from more than one side, and takes into consideration the structure of the imaged area (such as bone, soft tissue, and so forth). The most widely used cross-sectional imaging method is Computed Tomography (CT).

### **cycle series**

Cycling series enables you to quickly page through series, to identify series that are relevant for making a diagnosis. You can specify which viewports to use for cycling series.

### **Default Window/Level**

Window/Level values determined by the system. It is perceived as the best available Window/Level for the images.

### **DEFF**

Stands for Data Exchange File Format. DEFF is a file format for storing ultrasound images.

### **diagnosis**

A brief summary of a patient's condition. A diagnosis is made after images in the study are interpreted.

### **DICOM**

DICOM stands for Digital Imaging and Communications in Medicine Standard. This standard protocol is intended for communicating medical digital images among printers, workstations, acquisition modules and file servers. It was developed by the American College of Radiology (ACR) and National Electrical Manufacturers Association (NEMA). DICOM is also a part of the developing European standard by CEN, and Japanese standard by JIRA.

### **DICOM file**

Each image is based on its DICOM file. DICOM files are generated by the imaging device and interpreted by Horizon Medical Imaging™, before an image is displayed on the monitor. Each DICOM file is divided into two parts: DICOM Header, which contains all the patient and study data associated with the image, and Other Image Data, which conveys the pixel information.

**DICOM header**

Part of a DICOM file that contains all the patient and study data associated with the image. See also “[DICOM file](#)”.

**Dictated study**

A study for which an audio version of the report is made but not yet transcribed.

**Digital Radiography (DR)**

A radiological imaging modality that is similar to Computed Radiography (CR) and Digital X-Ray (DX). See “[Digital X-Ray \(DX\)](#)”.

**Digital X-Ray (DX)**

A radiological imaging modality that creates digital images directly from projection x-rays. The digital images are produced through a plate sensor placed on the other side of patient from the X-Ray source. When the imaging plate is scanned with the laser beam in the digitizer, the latent image information is released as visible. See also “[Projection X-Ray](#)”.

**display protocol**

A digital equivalent of a hanging protocol. A display protocol contains an ordered collection of display protocol stages through which the user can navigate to view the anchor study and any reference studies in a useful and organized fashion.

**display protocol stage**

A display protocol stage can be interpreted as a display protocol within a display protocol. It specifies which images are displayed and how they are displayed. Multiple stages may exist within a single display protocol, allowing the user to view images in different context.

**download manager**

A software application generally used to accelerate, resume, and/or schedule the download of files or software from the Internet.

**drag**

Hold down the left mouse button while moving the mouse, and then release the button.

**EMR application**

An Electronic Medical Record (EMR) application, such as the Horizon<sup>WP</sup> Physician Portal, that provides access to patients' electronic medical records and may offer the ability to personalize and integrate how medical information is received. It provides the tools needed to access and synchronize information in health information systems.

**ER Staff**

User role for individuals who treat patients admitted to the Emergency Room.



### **Estimate Window/Level**

Window/Level values estimated based on histogram analysis of the image.

### **ethnic origin**

The ethnic or racial background of a patient.

### **filter**

A condition or set of conditions for limiting a search. Only the items that match the criteria in your filter will be listed. Filters are available for the In-Box and Folder Finder.

### **Folder Finder**

A search tool for finding patients in the database and opening their studies of any status. Studies can be opened from the Horizon Medical Imaging™ database or an external database.

### **frame of reference**

The frame of reference consists of internal coordinates that define the spatial information of the image.

### **grouped study**

Studies that contain identical images as the anchor study, and share the same study date and time.

### **grayscale**

A range of gray levels consisting of various shades of gray. The gray scales of scanners and terminals are determined by the number of grays, or steps between black and white, that they can recognize and reproduce. Numbers higher than zero indicate brighter pixels. Zero is usually black.

### **HIS**

See [“Hospital Information System \(HIS\)”](#).

### **histogram**

A histogram depicts the frequency distribution of image intensities. The horizontal axis in a histogram shows the pixel values; the vertical axis shows the pixel counts

### **Horizon Medical Imaging™**

A DICOM compliant software program used to capture, store, transfer, retrieve, and review digital images. Horizon Medical Imaging™ consists of six applications: PACS Admin, Patient Manager, Sono Report, Route Manager, QA Manager, and Media Manager.

**Horizon Rad Station**

A DICOM compliant software program used to view multi-modality, grayscale, cross-sectional images.

**Hospital Information System (HIS)**

An integrated system for keeping and tracking patient records.

**Horizon Sono Station**

A DICOM compliant software program used to view multi-modality, grayscale, cross-sectional images.

**Hounsfield Unit (HU)**

The intensity unit for CT images. HU conveys the relative density of a pixel value compared to water.

**HTM**

The extension used for ASCII or RTF report files that are saved in HTML format.

**HTML**

Acronym for Hypertext Markup Language. It refers to a markup language that is used to create hypertext and hypermedia documents that are viewed in the Web browser. Documents stored in HTML format display the HTM extension.

**ICU Staff**

User role for individuals who monitor and treat critically ill patients in the Intensive Care Unit.

**ID Context**

A name that represents either the location where the patient receives an examination, or the HIS/RIS that schedules the study. An ID Context is necessary for multi-site hospitals, where a patient may have examinations at different locations, resulting in more than one Patient ID. Also known as ordering system.

**In-Box**

A tool for listing and opening studies. The following types of studies can be listed and opened: Scheduled studies, unreported studies, recently performed studies, recently reported studies, Needs Over-Read studies, Dictated studies, and Transcribed studies.

**image**

A single scan in a study. Each scan produces an image on the monitor display which is saved to the PACS.

### **image device**

An image capturing device.

### **image processing (or manipulation)**

The process of altering images that have been scanned or captured by a digital recording device. One can modify the image by changing its size, color, contrast and brightness, or compare and analyze images for characteristics that the human eye cannot perceive. Image processing can be broken down into several sub-categories including compression, enhancement, filtering, distortion, display, coloring, and editing.

### **Indications**

A brief description of why the study is scheduled, for example, the patient's symptom.

### **In-Progress study**

A study whose images are being captured by an image device or transferred to Horizon Medical Imaging™. Once the image capturing or transfer is finished, the study becomes a Performed study.

### **Integrating the Healthcare Enterprise (IHE)**

An initiative designed to stimulate the integration of the information systems. Its fundamental objective is to ensure that all required information for medical decisions is correct, and available to healthcare professionals. The approach employed in the IHE initiative is not to define new integration standards but rather to support the use of existing standards, such as DICOM and HL7, in their respective domains.

### **intensity unit**

A unit of measurement for pixel intensity. Hounsfield Unit (HU) is the intensity for CT images, and Optical Density (OD) is the intensity unit for CR/DR/DX images.

### **JPEG**

Stands for Joint Photographic Experts Group. JPEG usually refers to a file format for the compression of images. JPEG files are lossy compressed, that is to say the exact colors cannot be fully reproduced. This loss of precision is usually invisible to the human eye. The JPEG format is used widely on the Internet.

### **Magneto-Optical (MO)**

A type of optical technology that uses a laser beam to read from and write to a magnetic layer on a disk.

### **Magneto-Optical (MO) disk**

A type of disk that uses the Magneto-Optical technology. MO disks can be write-once-read-many (WORM) or rewriteable.

**Magnetic Resonance Imaging (MR or MRI)**

Initially researched in the early 1970's, this modality is widely used for imaging many types of soft-tissue.

**main toolbar**

A collection of icons that represent features of Horizon Rad Station.

**mask image**

Covering an area of an image with a rectangle.

**Media Manager**

An archive management application for maintaining archive devices and managing archive media.

**Medical Alerts**

Any special medical conditions that might affect general patient care and treatment decisions. Medical Alerts are part of a patient record.

**Medical Record Number**

See "Patient ID".

**modality**

An attribute of the equipment you use to capture images. For example, all images captured with an ultrasound system are of the Ultrasound Imaging (US) modality.

**mouse**

A pointing device attached to your computer. You can click, double-click, and right-click the mouse. Your mouse may also contain a rotating wheel used to page or scroll up or down.

**mouse pointer**

An arrowhead that appears on the screen to show you where you are pointing the mouse or trackball.

**mouse wheel**

A component of the mouse that lets you move through a window quickly.

**Multi-Planar Reconstruction (MPR)**

Multi-Planar Reconstruction (MPR) enables you to view cross-sectional series in an orthogonal plane other than the original one.

### **Needs Over-Read study**

A study preliminarily reported by a Radiology Resident. A Needs Over-Read study requires verification and sign-off from a Radiologist.

### **Nuclear Medicine (NM)**

Also referred to as Radionuclide Scanning, this imaging modality depicts not only the anatomy (structure) of an organ or body part, but also the function of the organ.

### **non-uniform slice**

A slice that contains irregular slice thickness, or inconsistent spacing.

### **Optical Density (OD)**

The intensity unit for CR/DR/DX images. OD conveys the opacity of a pixel.

### **offset**

A correction made to a frame of reference.

### **OT (Other)**

A modality designation used to distinguish studies whose images were not captured by an image device. For example, an old exam whose films were scanned using a film scanner will have an OT modality.

### **PACS Admin**

A system and site management application for maintaining information in the Horizon Medical Imaging™ database.

### **patient class**

Category to which the patient belongs. It is specified in the patient records and study information. The default patient classes in Horizon Medical Imaging™ are: Discharged, Inpatient, Outpatient, Unknown.

### **patient documentation**

Documents that are related to the study and/or the associated patient. For example, text or audio reports, scanned documents, and diagrams.

### **Patient ID**

Identification number assigned to the patient. The Patient ID is entered in Patient Manager, or received from a HIS/RIS.

### **patient location**

Location to which the patient is currently assigned. Typically refers to the ward where the patient is resting and sleeping.

**Patient Portfolio**

The Patient Portfolio enables you to access patient and study information. In addition, you can view reports, voice clips, and scanned documents in the Patient Portfolio.

**patient record**

The equivalent of a paper patient file. Stores all data about a patient. A patient can have one patient record only. For multi-site hospitals, a patient can have one patient record in each ID Context. See also ["ID Context"](#).

**PDF**

The acronym for Portable Document Format, a file format developed by Adobe® Systems. The PDF fully captures the formatting information of the document to which it is applied, regardless of the application in which the document was produced. The PDF makes it possible to send formatted documents that are produced in different applications, and have them appear on the recipient's computer as originally intended. PDF files can be viewed using Adobe® Reader® which is available at no cost.

**Performed study**

A study for which images are captured by an image device. A Performed study is waiting to be examined for image quality, or reviewed by a Radiologist or Radiology Resident.

**Performing Physician**

User role for individuals who perform procedures that require special attention.

**picker**

A user interface component that serves as a quick selection tool. It enables you to select an option from a predefined list quickly. It also automatically selects the option that matches what you enter.

**pinned viewport**

A pinned viewport does not participate in linked scrolling.

**pixel**

Graphics monitors display pictures by dividing the display screen into thousands (or millions) of pixels, arranged in rows and columns. The pixels are so close together that they appear connected. The number of bits used to represent each pixel determines how many colors or shades of grey can be displayed (See ["8-bit image"](#), ["16-bit image"](#), and ["24-bit image"](#)). The quality of the display system depends largely on its resolution, that is, how many bit are used to display each pixel.

**Power Users group**

A user group in Microsoft® Windows®. Users are assigned to specific user groups depending on the tasks they need to perform. To install Horizon Rad Station, you need to be assigned to the Power Users group.

### **procedure type**

The type of procedure performed, for example, Obstetric or Kidney. Sometimes referred to as exam type.

### **Projection X-Ray**

The original radiology scanning device. Projection X-Ray produces images through the projection of x-rays directly through a patient onto a flat receptor. For historical reasons, the output of projection x-rays is commonly referred to as plain film. See also "[Digital X-Ray \(DX\)](#)".

### **QA issue**

A situation that must be resolved in order to ensure the integrity of the received information, for example, a Patient ID is missing. There are three types of QA issues: patient information issues, study information issues, and Worklist issues.

### **Rad Report**

A separately purchased option used to create electronic medical reports. Reports can be viewed by other users.

### **Radiologist**

User role for individuals who interpret images within a study to produce a diagnosis.

### **Radiology Information System (RIS)**

Radiology Information System (RIS) provides an integrated information management approach for radiology departments. RIS provides the tools that automate scheduling, patient index files, resource management, film file tracking, transcription, reporting, billing, and managing reports.

### **Radiology Resident**

A Radiologist in training. User role for individuals who interpret images within a study to produce a preliminary diagnosis.

### **recently performed study**

A study whose status was changed to Performed within a specified time period.

### **recently reported study**

A study whose status was changed to Dictated and Reported within a specified time period.

### **reference studies**

Studies open after the anchor study, for the same patient.

**Referring Physician**

User role for individuals who refer patients. Referring Physicians may also review patient studies.

**registration**

Points of registration are specific identified anatomical locations in a series, in order to view the exact location in multiple series.

**report**

A record that conveys the patient information and physician's opinion about the study.

**Reported study**

A study that is marked as Reported by an authorized user, regardless of whether a report is attached to the study, or automatically by Horizon Medical Imaging™, when a final report is received.

**Requesting Physician**

User role for individuals who request a new study.

**Reviewed study**

A study whose image quality is examined, or for which a diagnosis is partially made. A Reviewed study is waiting to have a diagnosis made and signed off by a Radiologist.

**right-click**

Rest the mouse pointer on an object, such as an image, and then press the right mouse button. Right-clicking usually displays a context sensitive menu.

**right-drag**

Hold down the right mouse button while moving the mouse, and then release the button.

**RIS**

See "[Radiology Information System \(RIS\)](#)".

**Route Manager**

A teleradiology scheduling application for sending studies to DICOM receiving locations.

**RTF**

The extension used for documents stored in rich text format. RTF text files make it possible to transfer the original format of a document, for example font styles and paragraph indents, from one software application to another.



**sagittal**

A plane that runs perpendicular to the ground, dividing the body into right and left sections.

**Scheduled study**

A study whose scheduling information is added to the Horizon Medical Imaging™ database using Patient Manager, or whose scheduling information is received from a HIS/RIS. A Scheduled study is waiting to have images captured by a Technologist.

**screen resolution**

Screen resolution indicates the number of dots per square inch (dpi) displayed on a monitor screen, in the horizontal and vertical direction. The higher the number of dots, the better the resolution. Dots are also referred to as pixels.

**Secondary Capture (SC)**

A modality designation used to distinguish images that are not coming directly from a modality. For example, 3D images that were manipulated or created from another machine, then sent to Horizon Medical Imaging™.

**series**

A grouping of related images within a study. For example, images may be related spatially, in terms of the imaging technique used, or the session during which they were created.

**shortcut**

Shortcuts enable you to perform a task quickly. They eliminate the need to click an icon, select a menu option, or carry out a series of steps.

**slice spacing**

A variable of Computed Tomography (CT) imaging, slice spacing refers to spacing between scans. This spacing determines the thickness of the body slices that are not imaged.

**Sono Report**

A structured reporting application for diagnostic Ultrasound Imaging applications.

**Source Window/Level**

Window/Level values and/or Look-Up Table (LUT) functions provided by the image device. The values are stored in the DICOM header. Up to six Source Window/Level values and LUT functions can be stored.

**stale study**

A stale study occurs when data replication is not complete. For example, if a hospital replicates its data between two or more locations, and a system user attempts to retrieve a study before it has been replicated to the locations, the study is identified as stale.

**status bar**

Appears along the bottom edge of the In-Box and Folder Finder, to indicate the current status of the Study list and/or Patient list.

**Stored Image Presentation (SIP)**

A collection of visual attributes associated with images. When displayed in a viewport, the images are presented with these visual attributes.

**Study ID**

Identification number assigned to the study. The Study ID is entered in Patient Manager, or received from a HIS/RIS.

**Study list**

A list of studies in the In-Box or Folder Finder. The Study list lists studies and displays information about the studies and the patients associated with them. You can apply a filter to the list, to refine the search for a study.

**study status**

The standing of a study in the Horizon Medical Imaging™ workflow. There are eight study statuses in Horizon Medical Imaging™. A study status will change as the study progresses through the workflow.

**Study toolbar**

The Study toolbar enables you to set the screen layout and navigate studies.

**Technologist**

User role for individuals who capture images for new studies. They may also write preliminary reports and make initial image modifications.

**text overlay**

One of the layers that can be displayed on an image, or hidden. Text overlay displays details about an image, and the study and patient to which the image belongs.

**Thumbnail toolbar**

The thumbnail toolbar provides an overview of each open study. It contains a collection of thumbnails. Each thumbnail represents a series.

**TIFF**

Stands for Tag Image File Format. TIFF is a file format used for storing images.

### **Transcribed study**

A study whose dictated report is transcribed. A Transcribed study requires verification and sign-off from a Radiologist. This status is used at sites where the third-party transcription system can communicate the transcription progress to Horizon Medical Imaging™.

### **UDF Reader**

An application used to read CD-Rs that are closed to Universal Disc Format (UDF). UDF Reader is available at no cost from the Roxio Web site, [www.roxio.com](http://www.roxio.com). See also "[Universal Disc Format \(UDF\)](#)".

### **Ultrasound Imaging (US)**

This modality is also called Ultrasound Scanning or Sonography. Obstetric medicine relies heavily on Ultrasound Scanning to provide images of the fetus and uterus.

### **Uniform Resource Locator (URL)**

An Internet address that specifies the location of a document or resource on the Internet.

### **Universal Disc Format (UDF)**

A new file system for the optical disks.

### **unreported study**

A study whose status is In-Progress, Performed, Reviewed, or Needs Over-Read.

### **Web browser**

A software application used to locate and display web pages through an Internet connection. For example, Microsoft® Internet Explorer.

### **Video Streaming**

A separately purchased option used to view live video streams across a network. It is mainly used by Radiologists to remotely view studies and monitor imaging activity in an examination room.

### **viewport**

A viewing panel where images in a series are displayed and manipulated.

### **voice clip**

An audio message that is created using the Voice Clips application. Voice clips are attached to studies and can be accessed. See also "[patient documentation](#)".

### **WAV**

The extension used for digital audio data files such as voice clips.

**Window/Level**

Image processing term. Parameters that are used to adjust the brightness and contrast of an image. They define how the captured image intensities will be displayed on the computer monitor. Level controls the brightness of the image and Window controls the contrast. All image points with intensities outside of the range that is defined by Window/Level will be displayed black, if they are too dark, or white, if they are too bright.

**Window/Level preset**

Predefined Window/Level values and the applied LUT function for a specific modality/intensity unit. Window/Level preset can be used to quickly apply the optimal presentation settings for a particular modality and body region.

**Windows Media® Player**

Used to view exported cine clips. The Windows Media® Player can be downloaded for free from the Microsoft web site at:

<http://www.microsoft.com/windows/windowsmedia/download/default.asp>

See also “[Apple QuickTime](#)” and “[AVI](#)”.

**work group**

The medical facility or department with which a study is associated.

**X-Ray Angiography (XA)**

A radiological imaging modality that creates digital images (called angiograms) of the blood vessels. It is used to diagnose blockages and other blood vessel problems.



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**View Images...** 

**Manage Patients...** 

**Administrate PACS...** 


**Manage Archives...** 

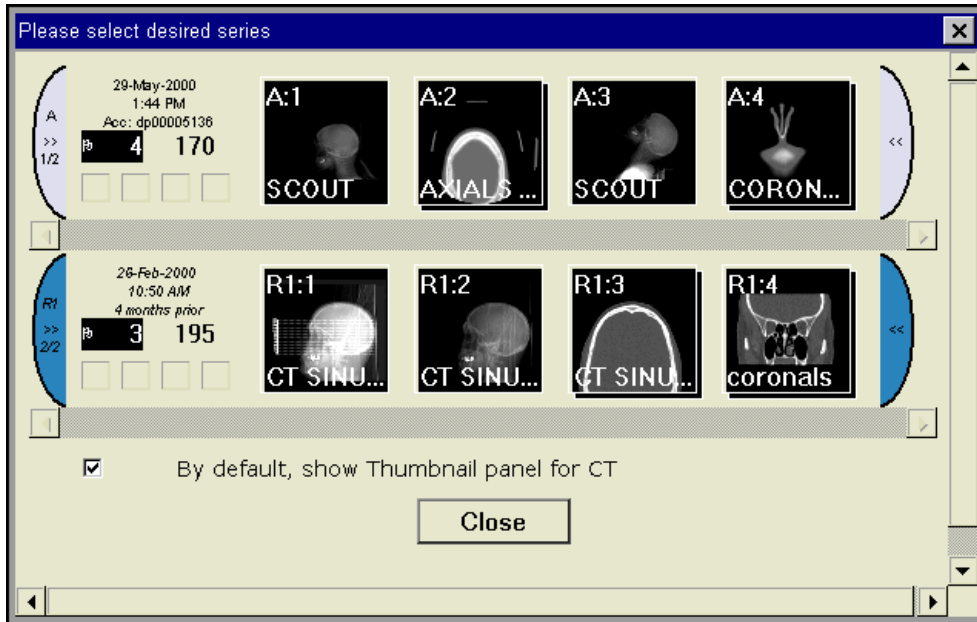
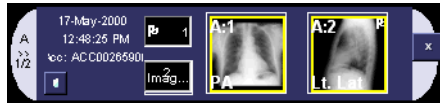
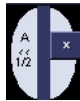
**MCKESSON**  
Horizon Medical Imaging 11.0 

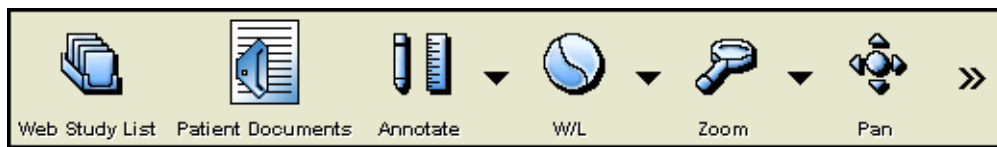
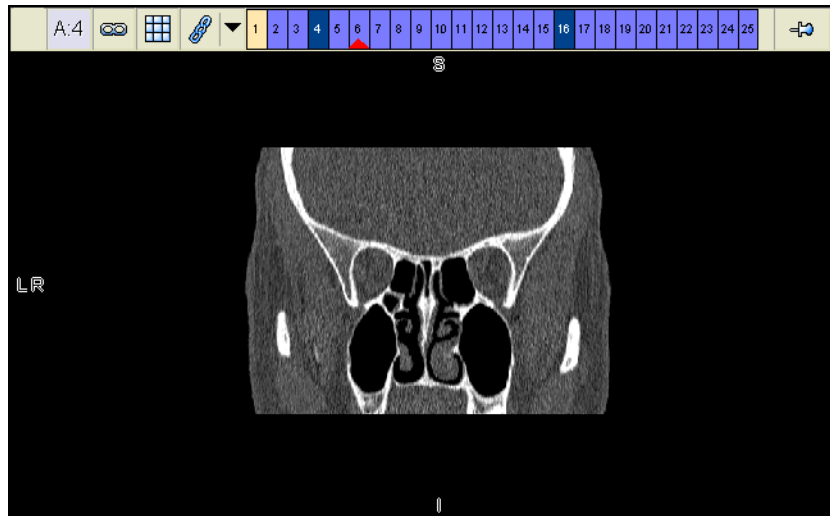


1 of 2  **Last name, First name**  
**1049323143[Main Hospital] 65Y F**

Display Protocol:  
**CT Head**  
Stage: 1 of 4  
**Survey**

 **A: 17-Sep-2003 9:52, CT, Abdomen Pelvis, 20002018**







- 25-Jun-2002 13:23 CT LSPINE
  - Reports
  - Voice Clips
  - 92 Images
  - Add Report...
  - Add Voice Clip...
  - Add Scanned Document...
  - Add Jot Pad Diagram...
- Feb-14-2002 16:11 CT LSPINE
  - Reports
  - 91 Images
- 25-Jun-2001 12:11 CT LSPINE
  - Reports
  - Jot Pad Diagrams
  - 91 Images
- All Studies...
- Show studies with the same body part
- Show studies with the same modality
- Ignore studies without images
- Ignore studies without documents

Unreported Studies

Please select an unreported study from: **3**

No filter set **4** **2** **5** Open Study

No filter set **6** **8** Find Study **9** Cancel

4 Stat priority studies need review

	<b>1</b>	Full Name	Patient ID	Ordering...	Priority	Performed on	Images
	<b>i</b>	Frezell, Michelle	1049323505	DEFAULT	Routine	15-Jul-2000 14:19	89
	<b>i</b>	Brunner, Rachel	1049323081	DEFAULT	Routine	28-Dec-2000 10:47	142
	<b>i</b>	Graboski, Dorothy	1049328967	West Wing	Routine	12-Nov-2000 11:16	104
	<b>i</b>	Huber, Brenda	1049329954	West Wing	Routine	27-Jun-2000 09:58	165
<b>!</b>	<b>i</b>	<b>Myhre, Debbie</b>	<b>1049389666</b>	<b>DEFAULT</b>	<b>Stat</b>	<b>6-Dec-2000 09:46</b>	<b>48</b>
	<b>i</b>	Myhre, Debbie	1049389666	DEFAULT	Routine	16-Jun-1997 16:41	21
	<b>i</b>	Scotchman, Lucie	1049330068	DEFAULT	Routine	8-Oct-2000 11:23	66
	<b>i</b>	Benitez, Bonita...	1049328839	DEFAULT	Routine	25-Oct-2000 11:03	134
	<b>i</b>	McBride, Lorrie	1049326517	West Wing	Routine	30-Jun-2000 10:58	3
	<b>i</b>	Paulgaard, Lori	1049326844	DEFAULT	Routine	17-May-2000 12:48	2
<b>!</b>	<b>i</b>	<b>Bolger, Cindy</b>	<b>1049323135</b>	<b>DEFAULT</b>	<b>Stat</b>	<b>9-Sep-2000 09:09</b>	<b>2</b>
	<b>i</b>	Fabian, Jill	1049323202	DEFAULT	Routine	7-Jun-2000 15:53	2
	<b>i</b>	Hertzman, Linda	1049332509	DEFAULT	Routine	27-Dec-2000 13:40	2299
	<b>i</b>	Hanif, Rukshana	1049325515	DEFAULT	Routine	29-Apr-2000 11:22	19
	<b>i</b>	Morgan, Mary	1049329309	West Wing	Routine	31-May-2000 10:21	101
	<b>i</b>	Curtis, Amanda	1049324075	DEFAULT	Routine	15-Aug-2000 13:43	32
	<b>i</b>	Sharma, Shyreem	1049329343	DEFAULT	Routine	20-Oct-1993 11:26	8
	<b>i</b>	Enns, Norma	1049393392	DEFAULT	Routine	25-Apr-2000 15:54	26
	<b>i</b>	Fabian, Jill	1049323202	DEFAULT	Routine	20-Oct-1993 17:02	144
	<b>i</b>	Kalfon, Rachel	1049327027	DEFAULT	Routine	24-Oct-2000 15:04	2

**7**

24 studies found Check for new studies every 10 minutes.

Recently Reported Studies List

Recently Reported Studies List

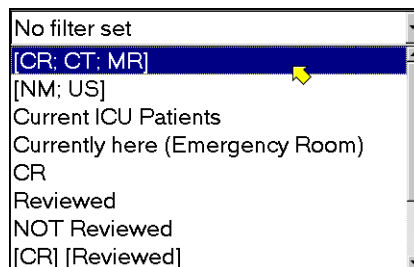
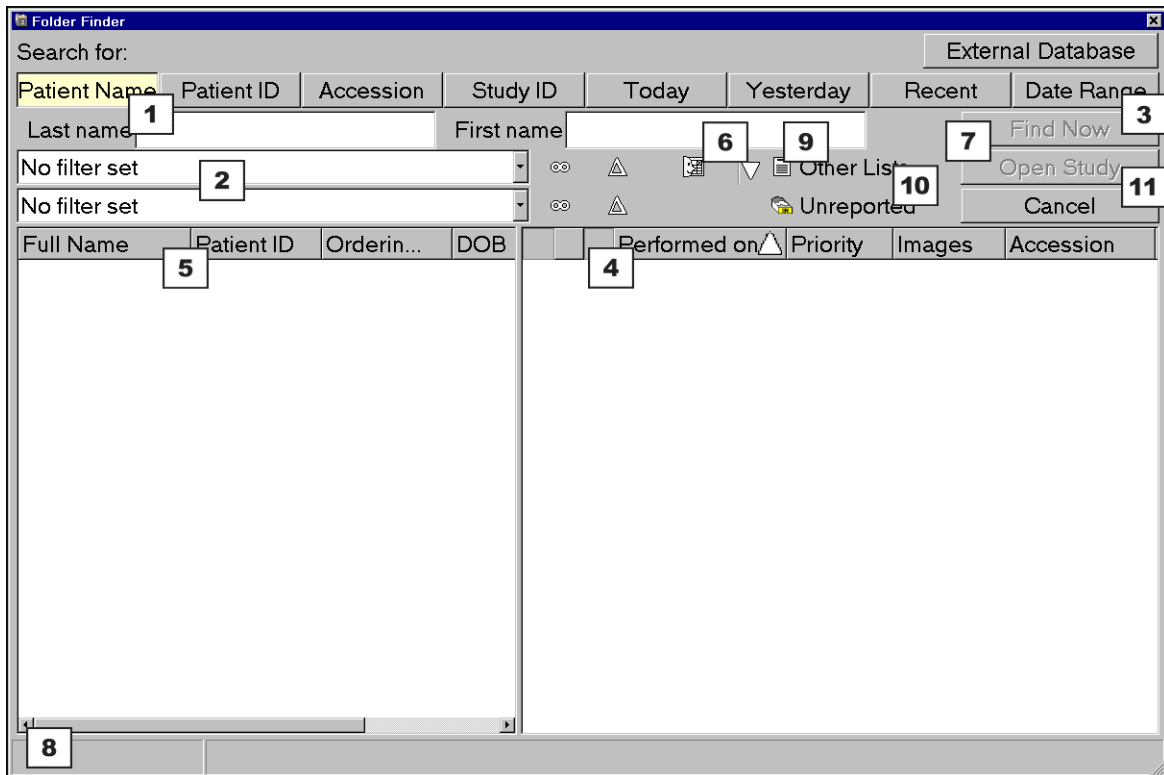
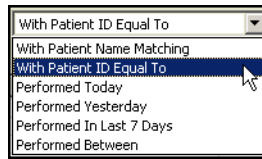
Recently Performed Studies List

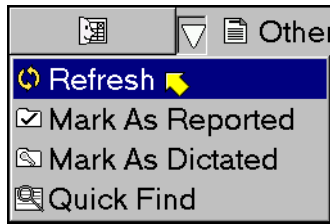
Unreported Studies List

Patient Locations: Modality Types:

All Patient Locations All Modali...

Report	Scanned Documents	Audio Clips	QA Issue
			Q
			Q
R		A	

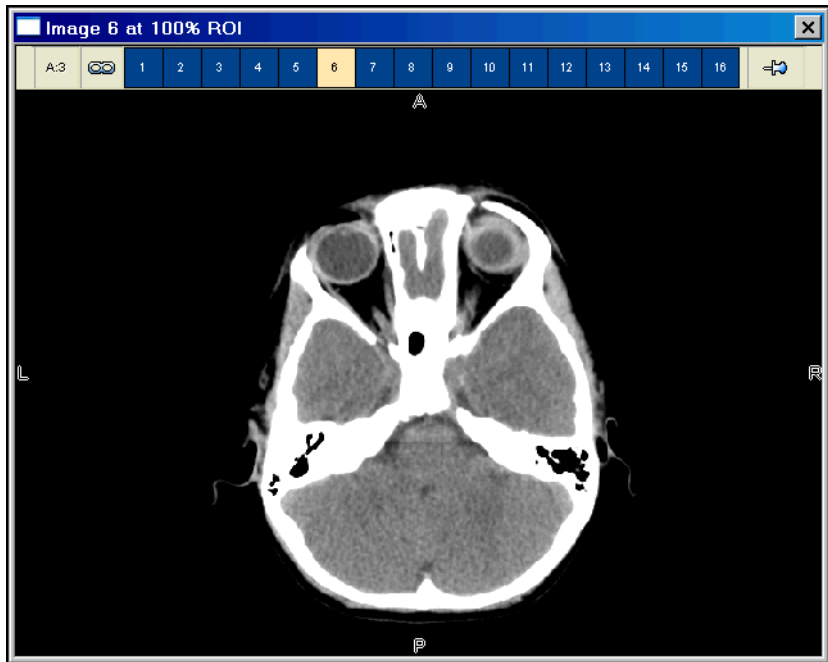


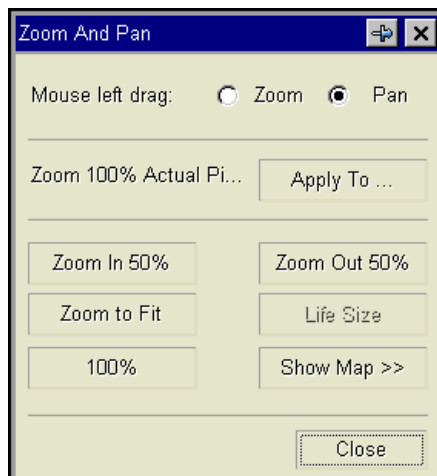
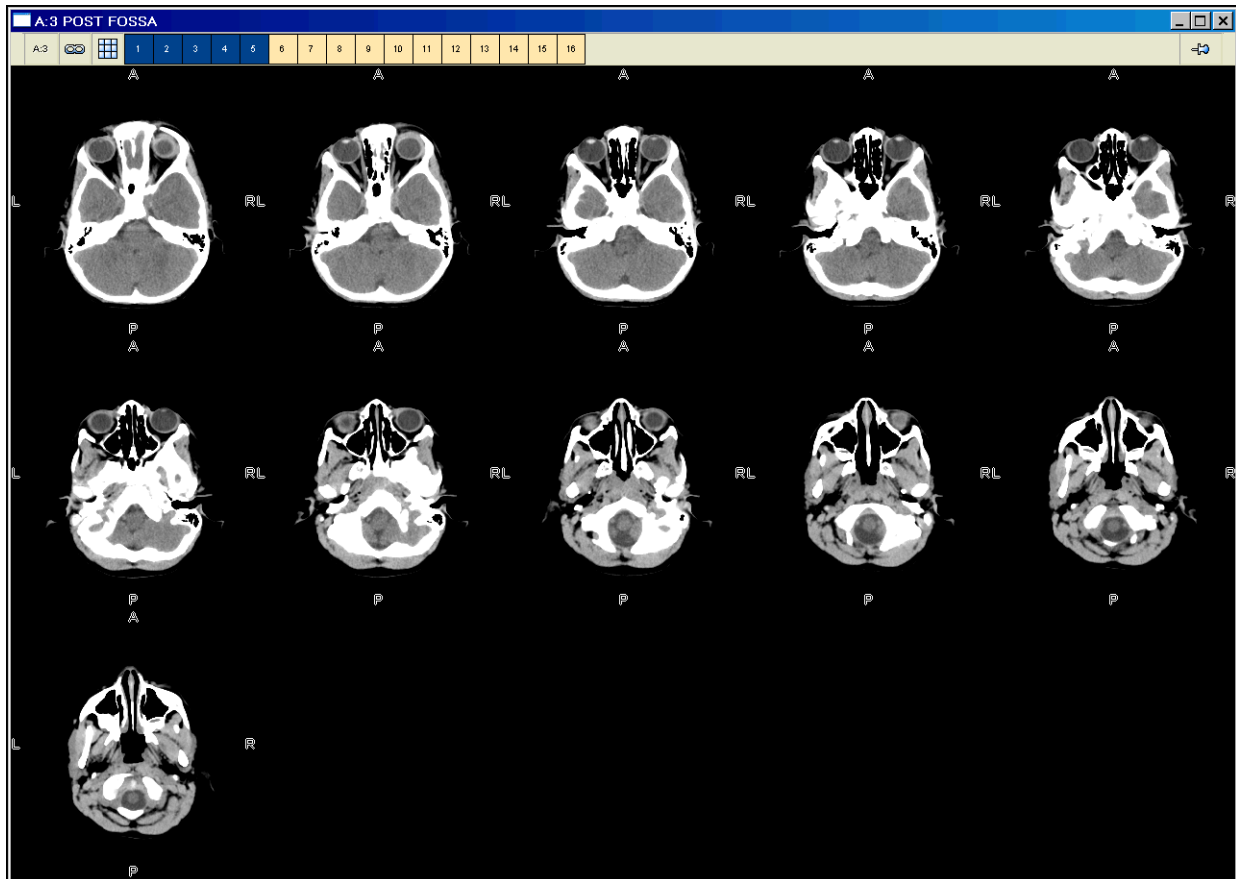


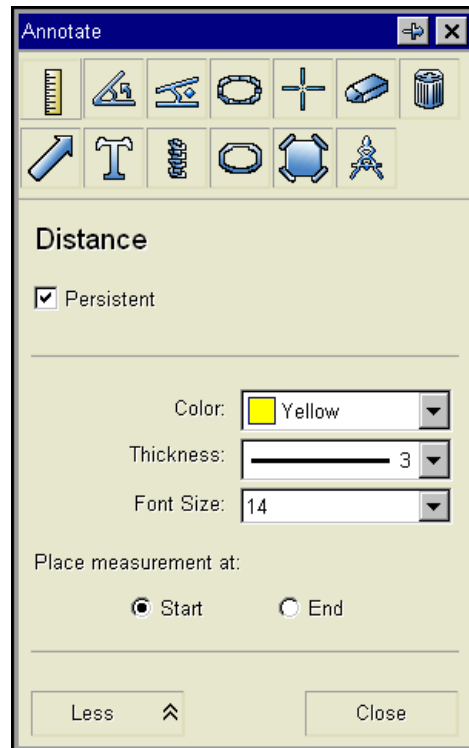
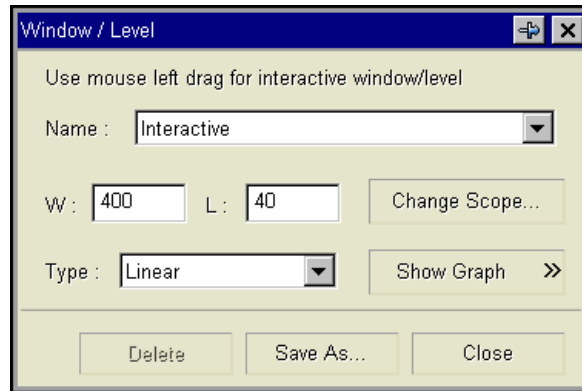
Patient Name	Patient ID	Accession	Study ID	Today	Yesterday	Recent	Date Range
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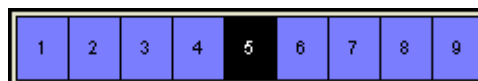
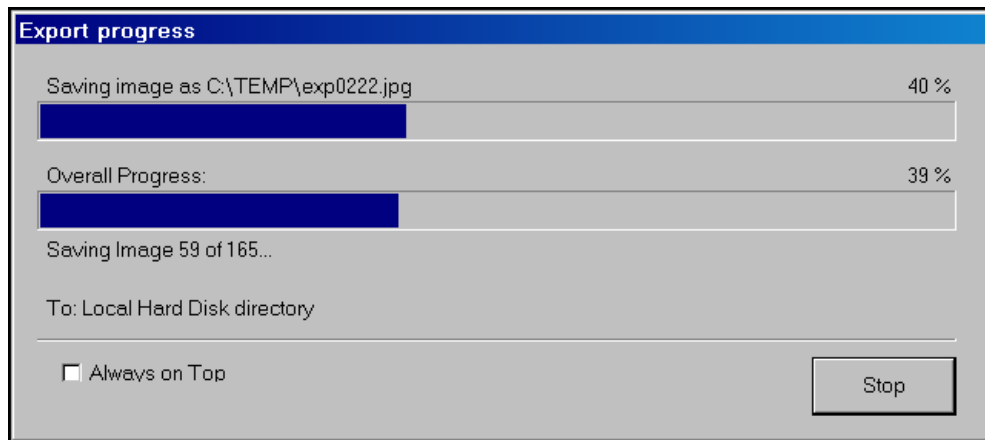
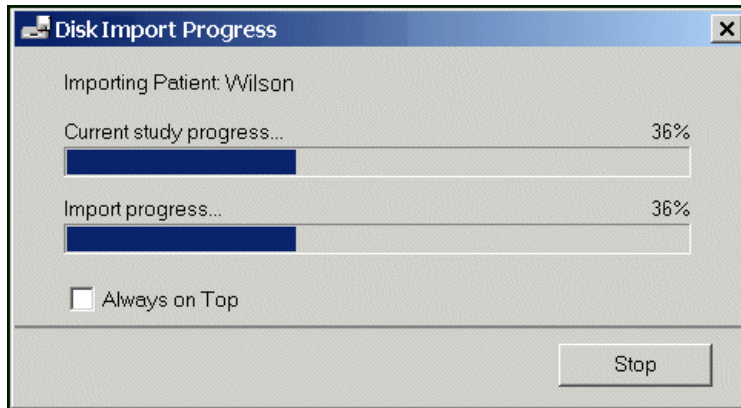






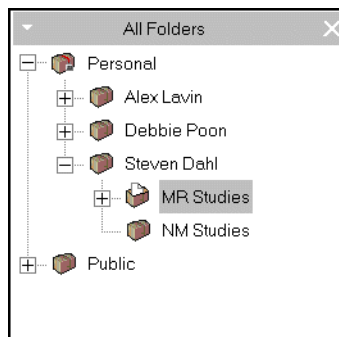









Folder \Personal\Steven Dahl\MR Studies





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MR Studies


Select an item to view its description

 Brain

 Chest

 Conference Presentation

 MR-Chest

 MR-Brain

**MCKESSON**

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