GE Medical Systems
Information Technologies Radiology Systems

Centricity 1.0 PACS Workstation Operators Manual

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Chapter 1. License, Copyright & Restrictions

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Complete instructions regarding claim procedure are found in Section S of the Policy and Procedures Bulletins.

14 July 1993

1.4. Certified Electrical Contractor Statement

All electrical installations that are preliminary to positioning of the equipment at the site prepared for the equipment shall be performed by licensed electrical contractors. In addition, electrical feeds into the Power Distribution Unit shall be performed by licensed electrical contractors. Other connections between pieces of electrical equipment, calibrations and testing shall be performed by qualified GE Medical personnel. The products involved (and the accompanying electrical installations) are highly sophisticated, and special engineering competence is required. In performing all electrical work on these products, GE will use its own specially trained field engineer. All of GE's electrical work on these products will comply with the requirements of the applicable electrical codes.

The purchaser of GE equipment shall only utilize qualified personnel (i.e., GE's field engineers, personnel of third-party service companies with equivalent training, or licensed electricians) to perform electrical servicing on the equipment.

1.5. Third Party Software

No third party software is to be loaded onto any subsystem of the GE PACS, including the PathSpeed™ Workstation. Loading of software other than that supplied by and authorized by GE Medical Systems is prohibited and will void the workstation warranty.

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1.7. Regulatory Requirements

This product complies with the regulatory requirements of the following:

- Council Directive 93/42/EEC concerning medical devices: CE 0459

  The CE marking label affixed to the product testifies compliance to the Directive.

  The location of the CE marking label is on the rear of the workstation computer’s case.

- Medical Device Quality System Regulation Manual (Food and Drug Administration, Department of Health and Human Services, USA).
- Underwriters’ Laboratories, Inc. (UL), an independent testing laboratory.
- Canadian Standards Association (CSA).
- International Electrotechnical Commission (IEC), international standards organization, when applicable.
- General Electric Medical Systems is ISO 9001 and EN 46001 certified.
- The original document was written in English.

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1.8. Mammography Warning

The mammography images displayed on or viewable from a Centricity Workstation should not be used for diagnostic purposes. Although Centricity Workstation is capable of displaying digital mammography images (MG modality) and scanned mammography images from film, it has NOT been approved by the FDA for diagnostic softcopy reading.

Chapter 2. Centricity Workstation Overview

2.1. About Centricity Workstation

GE's Centricity™ workstations are high-resolution, high-performance products used for reading and reviewing radiological images, patient reports, and for running diagnostic tools. Java-based software running on either a Windows 2000 Professional or Windows NT 4.0 platform allows rapid software development and takes advantage of evolving PC technology.

The following modalities are supported for display on the Centricity™ Workstation:

Modality Code	Modality Description
CR	Computed Radiography
CT	Computed Tomography
MR	Magnetic Resonance Imaging
SC	Secondary Capture
NM	Nuclear Medicine Imaging
US	Ultrasound Imaging
PT	Positron Emission Tomography
DX	Digital X-ray Imaging
MG	Digital X-ray Mammography
XA	X-ray Angiography
RF	X-ray Radioflouroscopic Imaging
DF	Digital Fluoroscopy
OT	Other

The workstation will only load and display images from the above list. If images are not displayable, a message appears to alert you that the modality is not supported.

The workstation is also able to display the following compressed image types:

- CompressXpress Lossless Compressed
- DICOM Uncompressed

- DICOM JPEG Baseline Compressed

2.2. Centricity Workstation Palettes

The major functions for searching and selecting patient exams and setting user preferences in the Centricity™ Workstation application are accessed through palettes. The Workstation palettes are available by clicking on the appropriate button in the Workstation **Taskbar** at the bottom of the screen. To access the Workstation **Taskbar**, move the mouse cursor to the bottom of the Workstation screen. When the Workstation **Taskbar** is displayed, you can click on the palette button you wish to access.

Palette Name	Palette Description
Work Modes	The basic functions of the Centricity™ Workstation are divided between finding and loading exams. For the former task, you use the Work Modes palette. The Work Modes palette appears when you first log in to the Centricity™ Workstation application. The Work Modes palette lets you select images from a predefined list of patients and/or exams.
Patient Jacket	The Patient Jacket palette appears when you first log into the Centricity™ Workstation application. The Patient Jacket palette displays all of the patient exams and image series for a patient selected in the Work Modes palette.
Order	When you select a patient exam in the Work Modes and/or Patient Jacket palette, you can view the patient demographic information as well as exam order information by opening the Order palette. The information contained in this palette is read-only.
Report	You can write, review, approve and append reports while using the Centricity™ Workstation to view images. The reports are saved with the patient's exam and can be viewed from the Report palette.
Utilities	Centricity™ Workstation is highly customizable to let you set up your own particular preferences, such as showing, hiding and resizing screen elements. With the Centricity™ Workstation, you can customize your layout and create your own default display protocols.
Tools	The Centricity™ Workstation includes the Tools palette for viewing and manipulating images. You can quickly adjust the windowing, create cine loops, examine images in detail with magnifying tools, and a great deal more. To aid in diagnosis, a wide range of measurement and annotations tools are also available.

2.3. Image View Area

The **Image View Area** is displayed automatically when an exam is opened from either the Work Modes or Patient Jacket palette. The images in your exam are displayed in the center of the screen. Depending on the procedures of your organization and how the Centricity™ Workstation has been configured, exams may be opened using a Default Display Protocol (DDP), thereby automatically applying a default display for the exam's images. The Image View Area provides powerful tools for viewing and diagnosis. You can zoom in for a close look at any image. You can invert, flip or rotate your images. You can also configure the image display area and monitors, as well as link or cross references images across image series.

2.4. DDPs

The Default Display Protocol (DDP) is a Centricity™ Workstation software feature which dictates how images are displayed when an exam and, if appropriate, its related historical exams are opened for viewing. They specify how each monitor is configured and assign a specific series to a specific display region. The Centricity™ Workstation comes with several default DDPs that you can use or modify to create your own DDPs.

Chapter 3. Centricity Workstation Basics

3.1. Power Up / Down the Workstation

3.1.1. To Power On the Centricity™ Workstation

Press the Power-On button(s) to start the computer and monitor.

Note: It may take a few minutes before the system fully boots and the icons and password box appear on the desktop. This is because the system needs to initialize the video drivers before anything may be displayed on the monitors.

After the boot sequence, the monitor illuminates and the Windows desktop is displayed. Depending on the configuration of the computer, a network password dialog box may also appear.

For dedicated systems, you are not required to log in to the Windows operating system. The Centricity™ Workstation software starts automatically. However, you are always required to log in to the Centricity™ Workstation application with a user-specific PACS password.

For Windows systems configured with the Centricity™ Workstation software application, you must log into the Windows operating system first. After logging in to the operating system, you must start the Centricity™ Workstation application.

3.2. To Power Down the Centricity™ Workstation

Before powering down the Centricity™ Workstation, make sure that all your work has been saved and all applications have been closed.

1. Simultaneously press **Ctrl-Alt-Delete** on the keyboard.
2. Select Shut Down... from the dialog box that appears.
3. Click on **OK**.

3.3. Launch the Workstation Application

If you are not using a dedicated system, then after successfully logging in to the workstation, an icon labeled Centricity™ appears on the computer's desktop.

Double-click on this icon to launch the Centricity™ Workstation application. Once the application has started, you are required to log in before you can start viewing exams.

3.4. Log In / Out of the Workstation

3.4.1. Log Into the Centricity™ Workstation

Once the Centricity™ Workstation application is launched, a Log In dialog box appears. You must log into the application. The following instructions assume that you have been registered in the system, assigned access privileges, and given a password.

From the Log In dialog box, you can select from a number of sites to log into. The first site listed in the Server drop-down field is the local site from which you can display images. The other sites listed in the Server drop-down field are remote sites from which you can log into as well. When you are logged into a remote site you are only able to browse worklists, send exams and print worklists. You are not able to view images from remote sites.

1. Launch the Workstation application.
2. Type your user name in the **User Name** field.
3. Type your password in the **Password** field.

Note: To ensure system security, all passwords and user names are case-sensitive. Be sure to type then exactly as they were given to you.

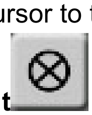
4. If you wish to log into a remote site, click on the **Server** drop-down field and select the remote site from the list.
5. Click on the **Login** button or press the **Enter** key.

   If you click the **Clear** button, your entries are erased. If you click the **Quit** button, the application closes. Depending on your system's configuration, the application either restarts or you are returned to the Windows Desktop.

Note: If you enter the wrong user ID or password, you will get an "Invalid Login" message box. Click OK to display the Log In dialog box again. Re-enter the correct user ID and password.

3.5. Log Out of the Centricity™ Workstation

Logging out of the application is done so that the application remains open, but your work session is ended.

1. Move the mouse cursor to the bottom of the screen to display the Workstation **Taskbar**.
2. Click on the **Logout**  icon.

   You are asked to verify that you wish to logout.
3. Click on the **Yes** button.

   The Log In dialog box appears. At this point, you or another user can log into the application and start a new work session.

3.6. Change Your Password

Passwords in the workstation application are used to protect patient data and define user access to different levels of the program. To maintain system security, you should change your password on a regular basis. To ensure system security, all passwords and user names are case-sensitive. Be sure to type them exactly as they were given to you. You are also able to change your password in the Utilities palette.

1. At the Centricity Login dialog box, click on the **Change Password** button.

   The Change Password dialog is displayed.
2. Enter a new password in the **New Password** field.
3. Re-enter the new password in the **Retype Password** field.
4. Click on **OK**.

3.7. Working in Workstation Palettes

The major functions for searching and selecting patient exams and setting user preferences in the Centricity Workstation application are accessed through the following palettes:

- Work Modes
  The **Work Modes** palette appears when you first log in to the Centricity Workstation application. The Work Modes palette is where you select to view images from a predefined list of patients and/or exams.
- Patient Jacket
  The **Patient Jacket** palette appears when you first log into the Centricity Workstation application. The Patient Jacket palette displays all of the patient exams and image series for a selected patient in the Work Modes palette.
- Order
  The **Order** palette displays a selected patient's demographic and exam order information. The information displayed in this palette is read-only.
- Report
  The **Report** palette appears when you first log in to the Centricity Workstation application. You can write, review, approve and append reports while viewing images. The reports are saved with the patient's exam and can be viewed from the Report palette.
- Utilities
  From within the **Utilities** palette you can set your own particular preferences, such as showing, hiding, and resizing screen elements. You can also customize your monitor layout and create your own default display protocols.
- Tools
  The Centricity Workstation includes the **Tools** palette for viewing and manipulating images. You can quickly adjust the windowing, create cine loops, exam images in detail with magnifying tools, and a great deal more. To aid in diagnosis, a wide range of measurement and annotation tools are also available.

3.7.1. Open a Palette

When you first log into the Workstation application, the Work Modes, Patient Jacket and Report palettes are automatically opened on top of the Image View Area. You can open the remaining palettes from the Workstation **Taskbar** or by using the Workstation shortcut keys.

Using the Workstation Taskbar:

1. Move the mouse pointer to the bottom of the Workstation screen.

   The Workstation Taskbar is displayed.
2. Click on the button for the palette you wish to open.

Using the Workstation Shortcut Keys:

Use the following Workstation shortcut keys to open and close the Workstation palettes.

Shortcuty Keys	Shortcut Description
Ctrl - O	Opens and closes the Order palette
Ctrl - P	Opens and closes the Patient Jacket palette
Ctrl - R	Opens and Closes the Report palette
Ctrl - U	Opens and closes the Utilities palette
Ctrl - W	Opens and closes the Work Modes palette

3.8. Close a Palette

You can close a Workstation palette by clicking on the **Close Window**  button in the top-right corner of the palette. The palette can be re-opened by selecting the button from the Windows **Taskbar**.

3.9. Move a Palette

The Workstation palettes are floating palettes, meaning that they can be moved to any location on the screen display.

Using the Mouse Pointer:

1. Left-click on the palette's title bar and hold down the mouse button.
2. While holding down the mouse button, drag the palette to a new location.
3. Release the mouse button when you are done positioning the palette.

Using the Workstation Shortcut Keys:

Shortcuty Keys	Shortcut Description
Ctrl - Left Arrow	Moves the active palette one monitor to the left

Ctrl - Right Arrow	Moves the active palette one monitor to the right
Ctrl - Up Arrow	Moves the active palette up one increment. The default increment can be configured by the system administrator.
Ctrl - Down Arrow	Moves the active palette down one increment. The default increment can be configured by the system administrator.
Ctrl - Page Up	Shifts the active palette up by the total height of the palette.
Ctrl - Page Down	Shifts the active palette down by the total height of the palette.

3.10. Resize a Palette

Along with repositioning the Workstation palettes, you can also resize the palettes for optimized viewing. The next time you open the palette, the application remembers the size and the placement of the palette.

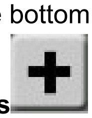
1. Click on a palette to make it the active window.
2. Move the mouse pointer over one of the out edges of the palette.

   The mouse pointer changes to a double-ended arrow.
3. Click the left mouse button and while holding down, drag the edge of the palette to the desired size.
4. Release the mouse button when you are done.

3.11. Show/Hide All Palettes

When working in the Image View Area, you can display or hide all of the Workstation palettes with one click of the mouse. This feature displays and hides all six of the Workstation palettes.

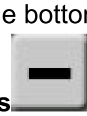
To Show All the Palettes:

1. Move the mouse pointer to the bottom of the screen to display the Workstation **Taskbar**.
2. Click on the **Show All Palettes** button.

   All of the Workstation palettes are displayed over the Image View Area and the **Show All Palettes** button changes to the **Hide All Palettes** button.

   You can also press the **F8** function key to display all the palettes.

To Hide All the Palettes:

1. Move the mouse pointer to the bottom of the screen to display the Workstation **Taskbar**.
2. Click on the **Hide All Palettes** button.

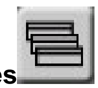
All of the Workstation palettes are hidden and just the Image View Area is displayed. Also, the **Hide All Palettes** button changes back to the **Show All Palettes** button.

You can also press the **F9** function key to hide all the palettes.

3.12. Show / Hide Selected Palettes

Along with displaying and hiding all of the Workstation palettes, you can also display and hide the appearance of the selected palettes. The selected palettes are the **Work Modes**, **Patient Jacket**, and **Report** palettes.

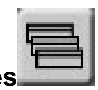
To Hide the Selected Palettes:

1. Move the mouse pointer to the bottom of the screen to display the Workstation **Taskbar**.
2. Click on the **Show / Hide Selected Palettes** button.

   The selected palettes are hidden and just the Image View Area is displayed.

   You can also press the **F7** function key to hide the selected palettes.

To Show the Selected Palettes:

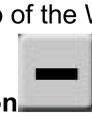
1. Move the mouse pointer to the bottom of the screen to display the Workstation **Taskbar**.
2. Click on the **Show/Hide Selected Palettes** button.

   The currently selected palettes are displayed over the Image View Area.

   You can also press the **F7** function key to show the selected palettes.

3.13. Minimize the Workstation Application

You can minimize the application when you are not working in it, without actually logging out or quitting.

1. Move the mouse cursor to the top of the Workstation screen to display the **Function Bar**.
2. Click on the **Minimize Application** button in the upper-right corner.

   The Centricity™ Workstation application will no longer be the main window.
3. To re-open the application window, click on the Centricity™ icon along the bottom of the screen in the Windows **Taskbar**.

3.14. Launch Third-Party Applications

You are able to launch third-party application at any time in the Workstation application through the Workstation **Taskbar**.

3.14.1. Open a Third-Party Application

1. Move the mouse pointer to the bottom of the Workstation screen to display the Workstation **Taskbar**.
2. Click on the **Launch Third-Party Apps**  button.

   A pop-up menu is displayed.
3. Select the application you would like to open.

   The application is launched and is displayed in front of the Workstation application.

3.14.2. Close a Third-Party Application

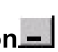
To close the third-party application and return to the Workstation application, use one of the following methods

- In the third-party application, click on the File menu and select Close.
- Click on the **Close Window**  button in the top-right corner of the third-party application window.

3.14.3. Move Between Applications

If you would like to work in both the Centricity™ Workstation and the third-party application, you can move between the applications without closing either one by using the **Minimize**  button in both applications.

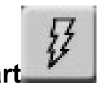
1. In the third-party application, click on the **Minimize Window**  button in the top-right corner.

   The application is minimized to a button in the Windows **Taskbar** and the Workstation application is displayed.
2. In the Workstation application, move the mouse pointer to the top of the screen to display the **Function Bar**.
3. Click on the **Minimize Application**  button in the right corner.

   The Workstation application is minimized to a button in the Windows **Taskbar**.
4. To move between the two applications, click on the appropriate application button in the Windows **Taskbar**.

3.15. Quit the Workstation Application

Quitting the application will perform a **Quit and Restart** which will quit the application and then restart it. The user is returned to the Log In screen. The purpose of this is to reset the application, if needed.

1. Move the mouse cursor to the bottom of the Centricity™ Workstation screen to display the Workstation's **Taskbar**.
2. Click on the **Quit and Restart**  icon.

   You are asked if you wish to quit the application.
3. Click on the **Yes** button.

   The Centricity Workstation application closes and automatically restarts again.

   If you click on the **Cancel** button, you are returned to the Centricity Workstation application.

3.16. Operating System Basics

The Centricity™ Workstation is similar to a Windows™ application. It uses features such as drop-down menus, mouse actions, command buttons, scroll bars, and other familiar aspects of the Windows interface.

3.16.1. Active Window

The active window is displayed in front of all the other windows and has a highlighted title bar. You can activate a window by clicking on its title bar or anywhere in the window.

3.16.2. Dialog Box

A dialog box is a window that requires you to verify an action or to enter additional information, such as entering a password, before proceeding with an action.

3.16.3. Function Bar

The Workstation uses an auto hide Function Bar to access the drop-down menu for the Image View Area. The Function Bar can be displayed by moving the mouse pointer to the top of the Workstation screen. To hide the Function Bar again, move the mouse pointer out of the Function Bar area.

3.16.4. Taskbar

The Workstation Taskbar is where you open the Workstation palettes, launch third-party applications and logout/quit the application. The Workstation Taskbar uses auto hide technology just like the Function Bar.

To display the Workstation Taskbar, move the mouse pointer to the bottom of the Workstation screen. To hide the Workstation Taskbar again, move the mouse pointer out of the Workstation Taskbar area.

3.16.5. Buttons

All buttons have a text label or a picture of the action they perform when selected. You select a button by placing the mouse pointer on it and clicking the left mouse button.

3.16.6. Drop-Down Menus

Drop-down menus are used in the Centricity™ Workstation application to make menu selections.

Each menu is a “button pair” that has a unique series of options. Clicking the left button performs the action identified by the button’s label. Clicking on the arrow to the right of the button displays a drop-down menu of more options.

Note: Sometimes menu items are disabled. These will be grayed out or “dimmed.” Disabled menu items cannot be selected.

You may select a menu option if it is enabled. Whenever an option is selected, the action is performed and the label on the left button changes to reflect the name of the selected menu option.

3.17. Hot Zone Buttons

Hot zone buttons look similar to regular buttons and behave somewhat like a drop-down menu. Hot zones are different from regular buttons, in that hot zones have an arrow at the bottom of the button and you do not click on the button to perform an action. Instead, you place the mouse pointer over the hot zone button (without clicking on it) and a drop-down menu is immediately displayed. To select a drop-down menu option, place the mouse cursor over the option and click the mouse button.

3.18. Tool Tip Labels

Tool tip labels display the function of a button or icon. If you point at a tool or an element with the cursor and leave the cursor there for a moment, the tool tip appears after a short delay. The tool tip disappears after approximately five seconds or when the mouse is moved.

3.19. Left and Middle Mouse Buttons

Note: The middle mouse button only works with state tools. Pixel lens and all action tools will not work with the middle mouse button.

You can use multiple standard palette tools by utilizing both your left and middle mouse buttons. The left mouse button can be used with both action and state tools. The middle mouse button can be set to a frequently used state tool.

3.20. Home/End Keys

You can use the **Home** and **End** keys to move quickly from one end of a series or worklist to another. When you press the **Home** key, you are moved to the beginning of an exam series or worklist. When you press the **End** key, you are moved to the end of an exam series or worklist.

Chapter 4. Work Modes Palette

4.1. Work Modes Palette Overview

When you open the Centricity™ Workstation application, you initially see the Work Modes palette. You use the Work Modes palette to select which exams you want to view (**Browse** tab), dictate (**Dictate** tab) or verify (**Verify** tab). You can browse, sort or filter exams. You can also organize your exams and images into folders.

The **Worklist Selector** drop-down menu appears in the upper-left corner of the Work Modes palette. Click on this drop-down menu to display a list of available worklists from which you can select to view. When you use the Centricity™ Workstation for the first time, you must first populate the Worklist Selector menu in the **Utilities** palette.

A row of five **Quick Access Worklist** buttons is located to the right of the Worklist Selector drop-down menu. Clicking on a Quick Access Worklist button displays the worklist indicated on the button. The Quick Access Worklist buttons are user-configurable. When you use Centricity™ Workstation for the first time, you must first define the worklist to be used with the Quick Access Worklist buttons.

When you select a worklist from the Worklist Selector drop-down menu or Quick Access Worklist buttons, the patient exams for that worklist are displayed in the **Worklist Area**. Each row represents a single exam. The number of potentially displayable image frames for an exam is shown in the **Img** column.

The **Filter Row** appears beneath the column headings in the worklist area. Entering search criteria in these fields will help narrow your search for specific exams - this is called "Filtering."

4.2. Open/Close the Work Modes Palette

When you open the Centricity™ Workstation application, you initially see the Work Modes palette. However, you can open and close the Work Modes palette through the Workstation Taskbar.

4.2.1. Open the Work Modes Palette

1. Move the mouse cursor to the bottom of the Centricity™ Workstation screen to display the Workstation **Taskbar**.
2. Click on the **Work Modes** button.

4.2.2. Close the Work Modes Palette

- Click on the **Close Window** button in the top-right corner of the **Work Modes** palette.

4.2.3. Shortcut Key

You can also press **Ctrl - W** on the keyboard to open and close the **Work Modes** palette.

4.3. Selecting a Worklist

You select the worklists you wish to view from the **Worklist Selector** drop-down menu. The **Worklist Selector** drop-down menu is located in the top-left corner of the **Work Modes** palette. Clicking on this drop-down menu, displays a list of available worklists from which you can select to view.

If this is your first time using the Centricity™ Workstation application, you must first populate the **Worklist Selector** drop-down menu in the **Utilities** palette.

4.3.1. To select a worklist:

1. Click on the **Worklist Selector** drop-down menu in the Work Modes palette.

   A list of available worklists is displayed.
2. Select the worklist you wish to view.

   The Worklist Area is updated to display the exams in the selected worklist. From the Worklist Area you can select to open an exam in the Image View Area or display additional exam information in the Patient Jacket palette.

4.4. Quick Access Worklists

4.4.1. Using the Quick Access Worklist Buttons

The **Quick Access Worklist** buttons are located to the right of the **Worklist Selector** drop-down menu and directly above the Worklist Area. Clicking on any of the Quick Access Worklist buttons automatically updates the Worklist Area with the chosen worklist.

A button that is not defined is labeled "Unused." You can configure the Quick Access Worklist buttons to display your frequently used worklists. Each button's label matches the name of the worklist it displays. If the full name of the worklist is not displayed on the button, holding the mouse cursor over the button displays a tool tip that shows the full name of the worklist.

1. Open the Work Modes palette.
2. Click on a Quick Access Worklist button.

   The selected worklist is displayed in the Worklist Area.

4.4.2. Configuring the Quick Access Worklist Buttons

Any worklist displayed in the **Worklist Selector** drop-down menu can be made into a Quick Access Worklist button.

1. Open the Work Modes palette
2. Click on the **Worklist Selector** drop-down menu in the **Work Modes** palette to display a list of available worklists.

   If this is the first time using the **Worklist Selector** drop-down menu, you need to populate the Worklist Selector menu with your worklists.
3. Click and hold the mouse button on the worklist you wish you to make into Quick Access Worklist button.
4. Drag the worklist over a **Quick Access Worklist** button and release the mouse button.

   The label of the button automatically changes to reflect the name of the worklist and is configured to display that worklist in the **Worklist Selector** field.

   The first (left-most) button is used to specify the user's default worklist. The default worklist is always displayed when the user first logs into the Centricity™ Workstation.

4.5. Sorting and Filtering Worklists

Your system may contain a great deal of patient exams. To help you quickly pinpoint the exam(s) you want to view, the Centricity™ Workstation application allows comprehensive sorting and filtering in the Work Modes palette.

By default, sorting is disabled for the **All Exams** and **All Recent Exams** worklists in the Work Modes palette because they are too large to sort. However, this is site-configurable and can be enabled by your service representative.

4.5.1. Sorting the Worklist Area

Sorting applies to the patient exams currently displayed in the Worklist Area and involves arranging the rows (exams) in the list in ascending or descending order based on a sorting criterion.

Note: Prior to sorting you may be asked "Sorting this Worklist May Take a Long Time. Do You Wish to Continue?" Click the Yes button to sort the worklist. Click the No button to cancel the sort.

Click on the column heading in the Worklist Area you want to sort by (e.g., Patient Name, Patient ID, Procedure). The first click sorts the exam list in ascending order. A second click sorts the exam list in descending order.

When you log out of Centricity™ Workstation, you sort order is saved for the next time you log back into the application.

4.6. Filtering the Worklist Area

As well as sorting patient exams, you can also ask the Centricity™ Workstation to show a specific set of exams in the Work Modes palette. When you have a large number of exams, this filtering functionality can be very helpful in finding the exam you are looking for.

The Centricity™ Workstation **Filter Row** allows you to display the exact contents of the worklist that matches some criteria, such as a specific patient name, patient ID, or procedure. The Filter Row is located beneath the column headings in the Worklist Area.

Note: When entering filtering criteria, please note that all fields are case sensitive.

- To filter an exam list, type the search criteria in the Filter Row beneath the column headings in the Worklist Area. Only those exams that meet the criteria are displayed. The system starts the search within a few seconds after you stop typing or if you press the Enter key.

- To return the Worklist to its original state, delete the search criteria from the Filter Row.

Note: To filter a Worklist based on a study date, enter a date that matches the date format shown in your Worklist.

4.7. Examples of Filtering

- To display all the patient exams for patient Jones J., type Jones, J in the filter row below the Patient Name column heading. The exam list displays all the exams for patients named Jones, J.

- After the exams meeting the primary search criteria are displayed, you can further reduce the number of exams by performing a secondary query. For example, patient Jones J. had a chest X-ray. You can type Jones, J in the filter row below the Patient Name column heading and type the word CHEST in the filter row below the Procedure column heading. The resulting exam list displays all patient named Jones, J. with a procedure beginning with the word chest.

4.8. Refresh Worklists

The Worklist Area in the **Work Modes** palette refreshes after a site-configurable amount of time to show new exams and updates to current exams. You can manually refresh a selected worklist at any time by clicking on the **Refresh** icon.

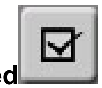
1. Open the Work Modes palette.
2. Select a worklist from the **Worklist Selector** drop-down menu.
3. Click on the **Refresh** icon.

   The Worklist Area is updated to show any new exams.

4.9. Change an Exam's Status

4.9.1. Mark an Exam Dictated in the Work Modes Palette

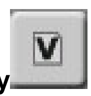
After you are done dictating an exam, you can mark it as “Dictated.”

1. Open the Work Modes palette.
2. Select a worklist from the **Worklist Selector** drop-down menu.
3. Click on an exam in the Worklist Area.
4. Click on the **Mark Dictated** icon.

   The exam’s status changes to “Dictate” in the **Status** column in the Worklist Area.

4.9.2. Mark an Exam Verified in the Work Modes Palette

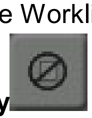
After you are done verifying the quality of an exam, you can mark it as “Verified.”

1. Open the Work Modes palette
2. Select a worklist from the **Worklist Selector** drop-down menu
3. Click on an exam in the Worklist Area.
4. Click on the **Verify** icon.

   The exam’s status changes to “Verified” in the **Status** column in the Worklist Area.

4.9.3. Unverify an Exam in the Work Modes Palette

After an exam is verified, you can change the status back to “Arrived.”

1. Open the Work Modes palette
2. Select a worklist from the **Worklist Selector** drop-down menu.
3. Select an exam in the Worklist Area with a status of “Verified.”
4. Click on the **Unverify** icon.

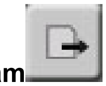
   The exam’s status is changed back to “Arrived.”

4.10. Send an Exam

The **Send Exam** functionality in the **Work Modes** palette allows you to send exams to another DICOM device or to another facility. Exams can be sent in either **immediate mode** (sent immediately) or **batch mode** (placed in a queue and sent at a later time).

1. Open the Work Modes palette
2. Select a worklist from the **Worklist Selector** drop-down menu.
3. Select the exam in the Worklist Area that you wish to send.

To select multiple exams, hold down the **Ctrl** key while you select the additional exams. To select a range of exams, click on the first exam in the range, hold down the **Shift** key, and select the last exam in the range.

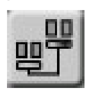
4. Click on the **Send Exam** icon.

   The Send Exam dialog box is displayed.
5. Select the destination for the exams from the **Destination** drop-down menu.
6. Select a send mode.
7. Select a reason for sending the exams.
8. Click on **OK** to send the exam.

4.11. Send Exam to a Remote Workstation

The **Send Exam to Remote Workstation** functionality in the Work Modes palette allows you to send exams to a remote workstation at another facility.

1. Open the Work Modes palette
2. Select a worklist from the **Worklist Selector** drop-down menu.
3. Select the exam in the Worklist Area that you wish to send.

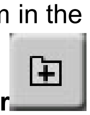
   To select multiple exams, hold down the **Ctrl** key while you select the additional exams. To select a range of exams, click on the first exam in the range, hold down the **Shift** key, and select the last exam in the range.
4. Click on the **Send to Remote WKS**  icon.

   The Send Exam to Remote Workstation dialog box is displayed.
5. Select the workstation you wish to which you wish to send the exam.
6. Click on **OK**.

4.12. Add an Exam to a Folder

Sometimes you may wish to copy an exam’s images into a folder (e.g., academic folder, conference folder, etc.) Folders are created by your System Administrator and allow you to organize and group together a set of images from one or more patients.

1. Open the Work Modes palette
2. Select a worklist from the **Worklist Selector** drop-down menu.
3. Select the exam in the Worklist Area that you wish to copy to a folder.

   To select multiple exams, hold down the **Ctrl** key while you select the additional exams. To select a range of exams, click on the first exam in the range, hold down the **Shift** key, and select the last exam in the range.
4. Click on the **Add Folder** icon.

   The Add Exams to Folder dialog box appears. The selected exam(s) appear in the

Selected Exams section of the dialog box. The available folders are displayed in the Destination Folders section.

5. Single-click on the folder to which you want to copy the images.
6. Click on the **Add** button.

   The exam’s images are copied to the selected folder.

4.13. Remove an Exam from a Folder

After you no longer need an exam in a particular folder, you can remove the exam from a folder.

1. Open the Work Modes palette
2. Select a worklist from the **Worklist Selector** drop-down menu.
3. Select the exam in the Worklist Area that you wish to remove from the folder.

   To select multiple exams, hold down the **Ctrl** key while selecting the additional exams. To select a range of exams, click on the first exam in the range, hold down the **Shift** key, and select the last exam in the range.

4. Click on the **Remove Folder** icon.

   The exam is deleted from the folder.

4.14. Print a Worklist

The **Print** function lets you print worklists from the **Work Modes** palette. This function only prints the portion of the worklist that is displayed (currently in the buffer). You are only able to print up to 200 entries.

1. Open the Work Modes palette
2. Click on the **Worklist Selector** drop-down menu and select the worklist you wish to print.
3. Click on the **Print** icon.

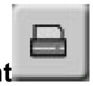
   The Print Selection dialog box is displayed.
4. Check the **Print Worklist** check box.
5. Click on the **Print** button.

   The worklist is printed to the workstation’s default printer.

4.15. Print an Exam's Film

You may print an exam’s images from the **Work Modes** palette. When you print an exam from the **Work Modes** palette, you print the entire exam. Individual images can only be printed from the Image View Area.

1. Open the Work Modes palette
2. Click on the **Worklist Selector** drop-down menu and select a worklist.
3. In the Worklist Area, select the exam you wish to print.

4. Click on the **Print** button.

   The Print Selection dialog box is displayed.
5. Check the **Print Film from Selected Exam** check box.
6. Click on the **Print** button.

   The Print Images dialog box is displayed.
7. Click on the **Camera** drop-down field and select a printer to print the exam.
8. Click on the **Format** drop-down menu and select the number of images (format) per sheet of film.

   The choices are 1, 2, 4, 6, 9, 12, 15, 16, 20, 35 images per sheet.
9. Enter how many copies of each film you want in the **Number of Copies** field (1 - 100 copies may be entered).
10. Select the radio button for the images you want to print:

    All Images prints all of the images for the exam. This is the only option that can be selected from the Work Modes palette.
11. Select a priority level.

    Standard give no special priority to the print job.

    High priority assigns a higher priority to the print job. Only radiologists and technologists can select this option.
12. Click on the **Print** button.

4.16. Fetch an Exam

Caution: **Images fetched from long-term storage may be lossy compressed. If the image information indicates that the image has been non-reversibly or lossy compressed, the image should not be used for diagnostic purposes.**

When an exam in the **Work Modes** palette is not located on the ISU (short-term storage), an "N" appears in the **Online** column. In this case, you must first perform a fetch from long-term storage in order to open the exam.

Opening an exam and initiating the fetch from long-term storage follows the same procedure as opening an exam that is already on the ISU.

4.17. Fetch Off-Line Exams from the Work Modes Palette

1. Open the Work Modes palette
2. Click on the **Worklist Selector** drop-down menu and select the worklist with the exams you want to fetch.
3. In the Worklist Area, select an exam with a status of "N" in the **Online** column.
4. Click on the **Display Exams** button beneath the Worklist Area.

   The Fetch Off-Line Exam dialog box appears. The Fetch Off-Line Exam dialog box displays the information, including patient name, study time, exam type, and number of images in each exam to be fetched.
5. Click on the **OK** button to perform the fetch.

   Once the exam is fetched, a "Y" appears in the **Online** column in the Worklist Area.
6. Select the patient exam you wish to open from the Worklist Area.
7. Click on the **Display Exams** button beneath the Worklist Area.

   The selected exam's images are displayed in the Image View Area.

4.18. Fetch Historical Exams from the Work Modes Palette

The **Patient Get** functionality allows you to manually fetch exams from remote short-term servers to your local short-term storage server.

1. Open the Work Modes palette
2. Click on the **Worklist Selector** drop-down menu and select the worklist with the exams you want to fetch.
3. Select an exam in the Worklist Area.
4. Click on the **Get Patient** icon to the left of the Worklist Area.

   A warning message is displayed stating that you are about to fetch all historical exams for the selected patient.
5. Click on **OK** to fetch all the historical exams.

4.19. Open an Exam

4.19.1. Open a Single Exam in the Work Modes Palette

1. Open the Work Modes palette
2. Click on the **Worklist Selector** drop-down menu and select a worklist.
3. In the Worklist Area, select the exam you wish to open.
4. Click on the **Display Exams** button beneath the Worklist Area.

   The Image View Area is displayed and the selected exam's images are loaded.

4.19.2. Open Multiple Exams in the Work Modes Palette

The number of multiple exams that can be opened is site configurable. The default is set to ten.

1. Open the Work Modes palette
2. Click on the **Worklist Selector** drop-down menu and select a worklist.
3. In the Worklist Area, select the exam you wish to open.

   Hold down the **Ctrl** key and single-click on the additional exams you wish to open. You can also select a range of exams by clicking on the first exam in the range, holding down the **Shift** key, and clicking on the end exam in the range.
4. Click on the **Display Exams** button beneath the Worklist Area.

   The multiple exams are opened in the Image View Area in the order that they appear in the worklist. Only the first selected exam is displayed in the Image View Area.
5. To select another opened exam for display, move your mouse cursor to top of the screen to display the **Function Bar**.
6. Place your mouse cursor over the **Opened Exams** hot zone button (do not click on the button).

   A list of opened exams is displayed.
7. Select the exam you wish to open.

   The selected exam images are displayed in the Image View Area.

4.19.3. Exams Opened by Multiple Users

It is possible for an exam to be opened by more than one Centricity™ Workstation users at one time.

If changes are made to the exam by multiple users, only the last changes made are saved. The first person who accesses the exam will not know that another person is also accessing the exam. If the other person makes changes, the first person may wonder why his/her changes were not saved.

If you receive an alert message telling you that another user is currently working with the same exam, it is recommended you do not make any changes to the exam until the other user is finished. This ensures that no data will be overwritten, and you will benefit from seeing the other user's changes or reports.

4.19.4. Open Comparison Studies in the Work Modes Palette

To have comparison exams open automatically based on associated default display protocols, select the **Include Comparisons** check box in the **Work Modes** palette.

When you select the **Include Comparisons** check box while opening an exam, the system searches for exams with the same procedure codes and body parts as the selected exam.

The following example illustrates which exams are opened based on their body parts and procedure codes.

Exam	Procedure	Body Part
Exam 1 & Exam 3	Procedure 1	Leg & Foot
Exam 4	Procedure 2	Foot & Arm
Exam 2	Procedure 3	Head
	Procedure 4	Foot & Hip

You open Exam 1 with Procedure Code 1 and Body Parts Leg and Foot. The system then searches for all other procedure codes that have Body Parts Leg OR Foot and selects the exam(s) that contains those procedure codes. So in this example, Exam 1, Exam 3, and Exam 4 would be opened.

4.20. To Open Comparison Exams

1. Open the Work Modes palette
2. Click on the **Worklist Selector** drop-down menu and select a worklist.
3. In the Worklist Area, select the exam you wish to open.

   Hold down the **Ctrl** key and single-click on the additional exams you wish to open. You can also select a range of exams by clicking on the first exam in the range, holding down the **Shift** key, and clicking on the end exam in the range.
4. Select the **Include Comparisons** check box.
5. Click on the **Display Exams** button beneath the Worklist Area.

   The images are loaded in the Image View Area and the comparison exams are listed under the Comp hot zone button.

4.20.1. Cancel an Open Request

When opening an exam, the screen view shifts to the Image View Area. While the exams are opening, you may select the **Close All Open Exams** option from the **Exam Functions** drop-down menu in the **Function Bar** or press **Ctrl-Alt-W** on the keyboard. This option cancels the open request and none of the exams are opened.

4.21. Macros

4.21.1. Macro Overview

"Macro" is a software term that applies to small programs or scripts that automate tasks which normally require a number of manual operations or steps.

The macros that are available in the Centricity Workstation software help to automate the process of dictating and verifying patient exams.

Example: If you need to examine a backlog of patient exams and change the status of each one to "Verified," this would normally require a number of separate steps (select the exam, review the exam, change the status, save the exam, select the next exam, etc.). The Verification macro can reduce most of that work to a couple of mouse clicks.

The Centricity Workstation uses two types of macros:

- Dictation (exams must be "unread")
- Verification (exams must be "unverified")

4.22. General Rules

When using macros, keep these rules in mind:

- Macros can be started only if there are no currently opened exams.
- If an exam in the worklist has no images, it is skipped by the macro.
- Exams whose images are off-line are skipped by the macro.
- If an exam in the worklist is currently opened on another workstation, the exam is skipped by the macro.

4.22.1. Dictation Macro

The **Dictation** macro is used to step through worklists of unread exams. Only users with proper authority can use this macro.

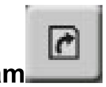
This macro lets you display the exams from the worklist, manipulate the exams as you wish, change the status to "Dictated," save the exam, close the exam, and display the next exam from the worklist.

1. Close all open exams.
2. Open the Work Modes palette.
3. Click on the **Dictate** tab.
4. Click on the **Worklist Selector** drop-down menu and select the worklist with the exams you need to dictate.

5. Select the exam you wish to begin with.
6. Click on the **Display Exams** button beneath the Worklist Area.

   The Image View Area is selected automatically and the selected exam in the worklist is displayed.
7. Dictate the exam as you normally would.

Note: Press Alt - L to skip the current exam without exiting the Dictation Macro. The skipped exam is not marked dictated.

8. Click the **Next Exam**  button when you are finished verifying the exam.

   The exam status is changed to “Dictated.” The exam is saved, closed and the next exam in the worklist is displayed.
9. After the last exam in the worklist is dictated, a dialog box is displayed that states, “You have reached the end of the worklist. Start again at the beginning? Click on the **No** button to end the macro. Click on the **Yes** button only if you started the macro somewhere other than the beginning of the worklist.

4.22.2. Verification Macro

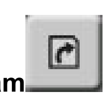
The **Verification** macro is used to step through worklists of unverified exams. Only users with proper authority can use this macro.

This macro lets you display the exams from the worklist, manipulate the exams as you wish, change the status to “Verified,” save the exam, close the exam, and display the next exam from the worklist.

1. Close all open exams.
2. Open the Work Modes palette.
3. Click on the **Verify** tab.
4. Click on the **Worklist Selector** drop-down menu and select the worklist with the exams you need to verify.
5. Select the exam you wish to begin with.
6. Click on the **Display Exams** button beneath the Worklist Area.

   The Image View Area is selected automatically and the selected exam in the worklist is displayed.
7. Perform the quality check on the exam.

Note: Press Alt - L to skip the current exam without exiting the Verification Macro. The skipped exam is not marked dictated.

8. Click the **Next Exam**  button when you are finished verifying the exam.

   The exam status is changed to “Verified.” The exam is saved, closed and the next exam in the worklist is displayed.
9. After the last exam in the worklist is verified, a dialog box is displayed that states, “You have reached the end of the worklist. Start again at the beginning?” Click on the **No** button to end the macro. Click on the **Yes** button only if you started the macro somewhere other than at the beginning of the worklist.

Chapter 5. Patient Jacket Palette

5.1. Patient Jacket Palette Overview

When you open the Centricity™ Workstation application, you initially see the **Patient Jacket** palette. You use the **Patient Jacket** palette to select which specific patient exams you want to view. You can browse, sort or filter the exams displayed in this palette. You can also organize your exams and images into folders.

The **Patient Exam List** displays the currently selected exam from the **Work Modes** palette and all exams for the patient's entire history. This list identifies the modality, procedure, study time, total number of images and on-line status.

The **Layout Manager** is accessible from the **Patient Jacket** palette. The **Layout Manager** allows you to select the display format you want to use to view exam images.

The **Image Series List** in the **Layout Manager** displays the image series for the currently selected exam in the Patient Exam List of the **Patient Jacket** palette. This list shows the image series identifier and the number of images in each image series.

Also, from within the **Layout Manager** you can modify how the exam is displayed by selecting the number of image series display regions and the number of images displayed in each region from the **Regions** and **Images** hot zone buttons.

5.2. Open/Close the Patient Jacket Palette

When you open the Centricity™ Workstation application, you initially see the **Patient Jacket** palette. However, you can open and close the **Patient Jacket** palette through the Workstation **Taskbar**.

5.2.1. Open the Patient Jacket Palette

1. Move the mouse cursor to the bottom of the Centricity™ Workstation screen to display the Workstation **Taskbar**.
2. Click on the **Patient Jacket** button.

5.2.2. Close the Patient Jacket Palette

- Click on the **Close Window**  icon in the top-right corner of the **Patient Jacket** palette.

5.2.3. Shortcut Key

You can also press **Ctrl - P** on the keyboard to open and close the **Patient Jacket** palette.

5.3. Display a Patient Exam List

When you select a worklist from the Work Modes palette, the related patient exams and historical exams are displayed in the **Patient Jacket** palette.

1. Open the Work Modes palette.
2. Click on the **Worklist Selector** drop-down menu and select a worklist.
3. Single-click on an exam in the Worklist Area.
4. Open the Patient Jacket palette.

   The selected patient's exams are displayed in the Patient Exam List area.

5.4. Sorting and Filtering Patient Exam Lists

Your system may contain a great deal of patient exams. To help you quickly pinpoint the exam(s) you want to view, the Centricity™ Workstation application allows comprehensive sorting and filtering.

5.4.1. Sorting the Patient Exam List

Sorting applies to the patient exams currently displayed in the Patient Exam List of the **Patient Jacket** palette and involves arranging the rows (exams) in the list in ascending or descending order based on a sorting criterion.

Note: Prior to sorting you may be asked "Sorting this Worklist May Take a Long Time. Do You Wish to Continue?" Click the Yes button to sort the worklist. Click the No button to cancel the sort.

In the **Patient Jacket** palette, click on the column heading in the Patient Exam List you want to sort by (e.g., Patient Name, Patient ID, Procedure). The first click sorts the Patient Exam List in ascending order. A second click sorts the Patient Exam List in descending order.

When you log out of Centricity™ Workstation, you sort order is saved for the next time you log back into the application.

5.5. Filtering the Patient Exam List

As well as sorting patient exams, you can also ask the Centricity™ Workstation to show a specific set of exams. When you have a large number of exams, this filtering functionality can be very helpful in finding the exam you are looking for.

The Centricity™ Workstation **Filter Row** allows you to display the exact contents of the worklist that matches some criteria, such as a specific patient name, patient ID, or procedure.

Note: When entering filtering criteria, please note that all fields are case sensitive.

To filter an exam list, type the search criteria in the **Filter Row** beneath the column headings in the Patient Exam List. Only those exams that meet the criteria are displayed. The system starts the search within a few seconds after you stop typing or if you press the **Enter** key.

To return the Patient Exam List to its original state, delete the search criteria from the **Filter Row**.

Note: To filter a Patient Exam List based on a study date, enter a date that matches the date format shown in your Patient Exam List.

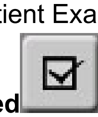
5.6. Examples of Filtering

To display all the chest procedures for a selected patient, type ***CHEST*** in the filter row below the **Procedure** column heading. The resulting patient exam list displays all exams with a procedure beginning with the CHEST.

5.7. Change an Exam's Status

5.7.1. Mark an **Exam** Dictated in the Patient Jacket Palette

After you are done dictating an exam, you can mark it as “Dictated.”

1. Open the Work Modes palette.
2. Click on the **Worklist Selector** drop-down menu and select worklist.
3. Single-click on an exam in the Worklist Area.
4. Open the Patient Jacket palette.
5. Select an exam in the Patient Exam List.
6. Click on the **Mark Dictated** icon.

   The exam’s status is changed to “Dictated.”

5.7.2. Mark an Exam Verified in the Patient Jacket Palette

After you are done verifying the quality of an exam, you can mark it as “Verified.”

1. Open the Work Modes palette.
2. Click on the **Worklist Selector** drop-down menu and select worklist.
3. Single-click on an exam in the Worklist Area.
4. Open the Patient Jacket palette.
5. Select an exam in the Patient Exam List.
6. Click on the **Verify** icon.

   The exam’s status is changed to “Verified.”

5.7.3. Unverify an Exam in the Patient Jacket Palette

After an exam is verified, you can change the status back to “Arrived.”

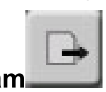
1. Open the Work Modes palette.
2. Click on the **Worklist Selector** drop-down menu and select worklist.
3. Single-click on an exam in the Worklist Area.
4. Open the Patient Jacket palette.
5. Select an exam in the Patient Exam List with a status of "Verified.".
6. Click on the **Unverify**  icon.

   The exam’s status is changed back to “Arrived.”

5.8. Send an Exam

The **Send Exam** functionality in the **Patient Jacket** palette allows you to send exams to another DICOM device or to another facility. Exams can be sent in either **immediate mode** (sent immediately) or **batch mode** (placed in a queue and sent at a later time).

1. Open the Work Modes palette.
2. Click on the **Worklist Selector** drop-down menu and select a worklist.
3. Open the Patient Jacket palette.
4. Single-click on the exam to be sent in the Patient Exam List.

   To select multiple exams, hold down the **Ctrl** key while you select the additional exams. To select a range of exams, click on the first exam in the range, hold down the **Shift** key, and select the last exam in the range.
5. Click on the **Send Exam**  icon.

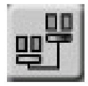
   The Send Exam dialog box is displayed.
6. Select the destination for the exams from the **Destination** drop-down menu.
7. Select a send mode.
8. Select a reason for sending the exams.
9. Click on **OK** to send the exam.

5.9. Send Exam to a Remote Workstation

The **Send Exam to Remote Workstation** functionality in the Patient Jacket palette allows you to send exams to a remote workstation at another facility.

1. Open the Work Modes palette.
2. Click on the Worklist Selector drop-down menu and select a worklist.
3. Select an exam in the Worklist Area.
4. Open the Patient Jacket palette.
5. Select the patient exam in the Patient Exam List that you wish to send.

   To select multiple exams, hold down the **Ctrl** key while selecting the additional exams. To select a range of exams, click on the first exam in the range, hold down the **Shift** key, and select the last exam in the range.

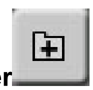
6. Click on the **Send to Remote WKS**  icon.

   The Send Exam to Remote Workstation dialog box is displayed.
7. Select the workstation you wish to send to.
8. Click on **OK**.

5.10. Add Exam to a Folder

Sometimes you may wish to copy an exam's images appear into a folder (e.g., academic folder, conference folder, etc.) Folders are created by your System Administrator and allow you to organize and group together a set of images from one or more patients.

1. Open the Work Modes palette.
2. Click on the **Worklist Selector** drop-down menu and select a worklist.
3. Click on an exam in the Worklist Area.
4. Open the Patient Jacket palette.
5. Single-click on the patient exam in the Patient Exam List.

   To select multiple exams, hold down the **Ctrl** key while you select the additional exams. To select a range of exams, click on the first exam in the range, hold down the **Shift** key, and select the last exam in the range.
6. Click on the **Add Folder** icon in the **Patient Jacket** palette.

   The Add Exams to Folder dialog box appears. The selected exam(s) appear in the Selected Exams section of the dialog box. The available folders are displayed in the Destination Folders section.
7. Single-click on the folder to which you want to copy the images.
8. Click on the **Add** button.

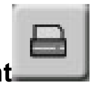
   The exam's images are copied to the selected folder.

5.11. Print a Patient Exam List

The **Print** function lets you print Patient Exam Lists from the **Patient Jacket** palette. This function only prints the portion of the Patient Exam List that is displayed (currently in the buffer). You are only able to print up to 200 entries.

1. Open the Work Modes palette.
2. Click on the **Worklist Selector** drop-down menu and select a worklist.
3. Click on an exam in the Worklist Area.
4. Open the Patient Jacket palette.
5. Single-click on the patient exam in the Patient Exam List.

   To select multiple exams, hold down the **Ctrl** key while you select the additional exams. To select a range of exams, click on the first exam in the range, hold down the **Shift** key, and select the last exam in the range.

6. Click on the **Print** icon in the Patient Jacket palette.

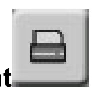
   The Print Selection dialog box is displayed.
7. Check the **Print Worklist** check box.
8. Click on the **Print** button.

   The Patient Exam List is printed to the workstation’s default printer.

5.12. Print an Exam's Film

You may print an exam’s images from the **Patient Jacket** palette. When you print an exam from the **Patient Jacket** palette, you print the entire exam. Individual images can only be printed from the Image View Area.

1. Open the Work Modes palette.
2. Click on the **Worklist Selector** drop-down menu and select a worklist.
3. Click on an exam in the Worklist Area.
4. Open the Patient Jacket palette.
5. Single-click on the patient exam in the Patient Exam List.

   To select multiple exams, hold down the **Ctrl** key while you select the additional exams. To select a range of exams, click on the first exam in the range, hold down the **Shift** key, and select the last exam in the range.
6. Click on the **Print** icon in the Patient Jacket palette.

   The Print Selection dialog box is displayed.
7. Check the **Print Film from Selected Exam** check box.
8. Click on the **Print** button.

   The Print Images dialog box is displayed.
9. Click on the **Camera** drop-down field and select a printer to print the exam.
10. Click on the **Format** drop-down menu and select the number of images (format) per sheet of film.

    The choices are 1, 2, 4, 6, 9, 12, 15, 16, 20, 35 images per sheet.
11. Enter how many copies of each film you want in the **Number of Copies** field (1 - 100 copies may be entered).
12. Select the radio button for the images you want to print.

    All Images prints all of the images for the exam. This is the only option that can be selected from the Patient Jacket palette.
13. Select a priority level.

    Standard gives no special priority to the print job.

    High priority assigns a higher priority to the print job. Only radiologists and technologists can select this option.
14. Click on the **Print** button.

5.13. Fetch Exams

Caution: **Images fetched from long-term storage may be lossy compressed. If the image information indicates that the image has been non-reversibly or lossy compressed, the image should not be used for diagnostic purposes.**

When an exam in the **Patient Jacket** palette is not located on the ISU (short-term storage), an "N" appears on the **Online** column. In this case, you must first perform a fetch from long-term storage in order to open the exam.

Opening an exam and initiating the fetch from long-term storage follows the same procedure as opening an exam that is already on the ISU.

5.14. Fetch Off-Line Exams from the Patient Jacket Palette

1. Open the Work Modes palette.
2. Click on the **Worklist Selector** drop-down menu and select a worklist.
3. Click on an exam in the Worklist Area.
4. Open the Patient Jacket palette.
5. Select the patient exam you wish to view that is off-line.
6. Click on the **Display Exams** button beneath the Patient Exam List.

   If the images are off-line, the Fetch Off-Line Exam dialog box appears. The Fetch Off-Line Exam dialog box displays the exams information, including patient name, study time, exam type, and number of images in each exam to be fetched.
7. Click on the **OK** button to perform the fetch.

   Once the exam is fetched, a "Y" appears in the **Status** column.
8. Select the patient exam you wish to open from the **Patient Jacket** palette.
9. Click on the **Display Exams** button beneath the Patient Exam List.

5.15. Fetch Historical Exams from the Patient Jacket Palette

The **Patient Get** functionality allows you to manually fetch exams from remote short-term servers to your local short-term storage server.

1. Open the Work Modes palette.
2. Click on the **Worklist Selector** drop-down menu and select a worklist.
3. Click on an exam in the Worklist Area.
4. Open the Patient Jacket palette.
5. Select the patient exam you wish to open.
6. Click on the **Get Patient**  icon to the left of the Patient Exam List.

   A warning message is displayed stating that you are about to fetch all historical exams for the selected patient.
7. Click on **OK** to fetch all the historical exams.

5.16. Open an Exam

5.16.1. Open a Single Exam in the Patient Jacket Palette

1. Open the Work Modes palette.
2. Click on the **Worklist Selector** drop-down menu and select a worklist.
3. Click on an exam in the Worklist Area.
4. Open the Patient Jacket palette.
5. Single-click on the patient exam in the Patient Exam List.
6. Click on the **Display Exams** button beneath the Patient Exam List in the Patient Jacket palette.

   The Image View Area is displayed and the selected exam's images are loaded.

5.16.2. Open Multiple Exams in the Patient Jacket Palette

The number of multiple exams that can be opened is site configurable. The default is set to ten.

1. Open the Work Modes palette.
2. Click on the **Worklist Selector** drop-down menu and select a worklist.
3. Click on an exam in the Worklist Area.
4. Open the Patient Jacket palette.
5. Single-click on the patient exam in the Patient Exam List.

   To select multiple exams, hold down the **Ctrl** key while you select the additional exams. To select a range of exams, click on the first exam in the range, hold down the **Shift** key, and select the last exam in the range.
6. Click on the **Display Exams** button beneath the Patient Exam List in the Patient Jacket palette.

   The multiple exams are opened in the Image View Area in the order that they appear in the worklist. Only the first selected exam is displayed in the Image View Area.
7. To select another opened exam for display, move your mouse cursor to top of the screen to display the **Function Bar**.
8. Place your mouse cursor over the **Opened Exams** hot zone button (do not click on the button).

   A list of opened exams is displayed.
9. Select the exam you wish to open.

   The exam images are displayed in the Image View Area.

5.16.3. Exams Opened by Multiple Users

It is possible for an exam to be opened by more than one Centricity™ Workstation users at one time.

If changes are made to the exam by multiple users, only the last changes made are saved. The first person who accesses the exam will not know that another person is also accessing the exam. If the other person makes changes, the first person may wonder why his/her changes were not saved.

If you receive an alert message telling you that another user is currently working with the same exam, it is recommended you do not make any changes to the exam until the other user is finished. This ensures that no data will be overwritten, and you will benefit from seeing the other user's changes or reports.

5.16.4. Open Comparison Studies in the Patient Jacket Palette

To have comparison exams open automatically based on associated default display protocols, select the **Include Comparisons** check box in the **Patient Jacket** palette.

When you select the **Include Comparisons** check box while opening an exam, the system searches for exams with the same procedure codes and body parts as the selected exam.

The following example illustrates which exams are opened based on their body parts and procedure codes.

Exam	Procedure	Body Part
Exam 1 & Exam 3	Procedure 1	Leg & Foot
Exam 4	Procedure 2	Foot & Arm
Exam 2	Procedure 3	Head
	Procedure 4	Foot & Hip

You open Exam 1 with Procedure Code 1 and Body Parts Leg and Foot. The system then searches for all other procedure codes that have Body Parts Leg OR Foot and selects the exam(s) that contains those procedure codes. So in this example, Exam 1, Exam 3, and Exam 4 would be opened.

5.17. To Open Comparison Exams

1. Open the Work Modes palette.
2. Click on the **Worklist Selector** drop-down menu and select a worklist.
3. Click on an exam in the Worklist Area.
4. Open the Patient Jacket palette.
5. Single-click on the patient exam in the Patient Exam List.

   To select multiple exams, hold down the **Ctrl** key while you select the additional exams.

To select a range of exams, click on the first exam in the range, hold down the **Shift** key, and select the last exam in the range.

6. Select the **Include Comparisons** check box beneath the Patient Exam List.
7. Click on the **Display Exams** button beneath the Patient Exam List.

   The images are loaded in the Image View Area and the comparison exams are listed under the Comp hot zone button.

5.17.1. Cancel an Open Request

When opening an exam, the screen view shifts to the Image View Area. While the exams are opening, you may select the **Close All Open Exams** option from the **Exam Functions** drop-down menu in the **Function Bar** or press **Ctrl-Alt-W** on the keyboard. This option cancels the open request and none of the exams are opened.

Chapter 6. Layout Manager

6.1. Access the Layout Manager

The **Layout Manager** is displayed at the bottom of the **Patient Jacket** palette. You can either view the **Layout Manager** in full mode or view it along with the Patient Exam List.

6.1.1. View the Layout Manager in Full Mode.

1. Open the Patient Jacket palette.
2. Click on the **Up Arrow** button in the lower-left corner of the **Patient Jacket** palette.

   The Patient Exam List area is minimized and the **Layout Manager** fills the entire palette window.
3. To minimize the **Layout Manager** again, click on the **Down Arrow** button in the upper-left corner of the **Patient Jacket** palette.

   The **Layout Manager** is minimized and the Patient Exam List area is displayed again.

6.1.2. View Both the Patient Exam List and Layout Manager

1. Open the Patient Jacket palette
2. Move the mouse pointer to the bottom outer edge of the **Patient Jacket** palette until the pointer changes to a double-ended arrow.
3. Click and hold the mouse button on the edge of the palette.
4. Drag the outer edge down until the **Layout Manager** is visible.
5. Release the mouse button when you have the desired size.

6.2. Configure the Monitor Layout

You can change the number of series displayed on each monitor by selecting a display option for a selected monitor icon in the **Layout Manager**. The monitor icons represent the available system monitors and the layout of the Image Series Display Areas. If you have four system monitors, then four monitor icons are displayed. If you have two system monitors, only two monitor icons are displayed.

1. Open the Patient Jacket palette and display the Layout Manager.
2. In the **Layout Manager**, click on the monitor icon you wish to configure.
3. Place the mouse pointer over the **Regions** hot zone button.

   A drop-down menu is displayed with the following configuration options:

1
2H
2V
3V
4H
4
6
9

4. Select the image series display layout you wish to use for the monitor.

   The monitor icon automatically shows the new layout.

6.3. Configure an Image Series Display Area

As well as configuring the number of image series to be displayed on each monitor, you can further configure each image series' Image Series Display Area. For each Image Series Display Area, you can select the number of images you want to display.

1. Open the Patient Jacket palette and display the Layout Manager.
2. Select a monitor layout.
3. In the **Layout Manager**, click on the Image Series Display Area in the monitor icon you wish to format.
4. Place the mouse pointer over the **Images** hot zone button.

   A drop-down menu is displayed with the following configuration options:

   Stack
   1
   2H
   2V
   4
   6
   9
   12
   Custom
5. Select the number of images you wish to display.

   The monitor icon automatically shows the new layout.

6.4. Create a Custom Layout

When you configure the Image Series Display Area in the Layout Manager and you do not see the image format that you want, you can create a custom display format.

1. Open the Patient Jacket palette and display the Layout Manager.
2. In the Layout Manager, click on the Image Series Display Area on the monitor icon you wish to format.
3. Place the mouse pointer over the **Images** hot zone button.

   A drop-down menu is displayed.
4. Click on **Custom**.

   The Custom Format dialog is displayed.

5. Click the mouse pointer in the grid at the point which represents the number of columns and rows you want to display the images in.
6. Click on **OK**.

   The monitor icons are updated to show the new custom layout.

6.5. Display Image Series from the Layout Manager

You may display any of the image series associated with an exam by selecting the exam in the Patient Exam List in the Patient Jacket palette. When you select an exam, the image series are displayed in the Image Series List of the Layout Manager.

1. Open the **Work Modes** palette.
2. Click on the **Worklist Selector** drop-down menu and select a worklist.
3. Open **the Patient Jacket** palette.

   The selected patient's exams are displayed in the Patient Jacket palette.
4. Display the Layout Manager.
5. Select the exam you wish to view in the Patient Exam List in the Patient Jacket palette.

   The exam's series are displayed in the Image Series List in the Layout Manager area.
6. Click and drag the desired image series to an Image Series Display Area on a monitor icon.

   The Image Series Display Area is on the right side of the Layout Manager and is a graphical representation of the Workstation's monitor layout.

   The images from the image series are displayed immediately in the selected display area.

6.6. Identify Where a Series is Displayed

If you are unsure of what series is currently displayed, you can verify it in the Layout Manager of the Patient Jacket palette. There are two methods for verifying the series.

- Select a series in the Image Series List of the Layout Manager. The corresponding graphical monitor is highlighted in white.

- Select an Image Series Display Area on a monitor icon in the Layout Manager. The corresponding series is highlighted in white in the Image Series List.

Chapter 7. Order Palette

7.1. Order Palette Overview

When you select a patient exam from either the Work Modes or Patient Jacket palette, the selected patient's demographic information and exam order information is displayed in the Order palette. The information displayed in this palette is read-only and can be printed.

7.2. Open/Close the Order Palette

7.2.1. Open the Order Palette

1. Move the mouse cursor to the bottom of the Centricity™ Workstation screen to display the Workstation **Taskbar**.
2. Click on the **Order** button.

7.2.2. Close the Order Palette

- Click on the **Close Window** icon in the top-right corner of the Order palette.

7.2.3. Shortcut Key

You can also press **Ctrl - O** on the keyboard to open and close the Order palette.

7.3. View a Patient's Order Information

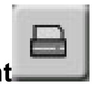
1. Select a patient exam from the Work Modes or Patient Jacket palette.
2. Open the **Order** palette.

   The selected patient's demographic and exam information is displayed.

7.4. Print a Patient's Order Information

1. Select a patient exam from the Work Modes or Patient Jacket palette.
2. Open the Order palette.

   The selected exam’s order information is displayed in the Order palette.

3. Click on the **Print**  icon in the Order palette.

   The Print dialog is displayed.

4. Select the printer to which you want to print the information.
5. Enter the number of copies you wish to print.
6. Click on **OK**.

Chapter 8. Report Palette

8.1. Report Palette Overview

The **Report** functions are available from the **Report** palette. From the Report palette you are able to view any report information that exists for an exam, and if appropriate, append to the report. You can also approve reports, as well as select approvers for reports.

The **Standard Reports** pull-down menu displays the standard report templates that are available. These templates are created in the Exam Manager application. Refer the Exam Manager application's online help for detailed instructions on creating templates.

The **Report Area** displays the text of the current exam's report. The information displayed here initially shows the patient demographics and other data already entered for the patient's exam. You may edit the presented data (if authorized), as well as enter conclusions. You may enter information into the report as long as the exam status has not been changed to "Complete."

When you are approving a report, you select an approval option from the **Report Approval** drop-down menu. This is also where you would select approvers for a new exam.

When you are ready to change the status of the exam, select a new status from the **Set Exam Status** drop-down menu.

8.2. Open the Report Palette

When you open the Centricity™ Workstation application, you initially see the **Report** palette. However, you can open and close the Report palette through the Workstation **Taskbar**.

8.2.1. Open the Report Palette

1. Move the mouse cursor to the bottom of the Centricity™ Workstation screen to display the Workstation **Taskbar**.
2. Click on the **Report** button.

8.2.2. Close the Report Palette

- Click on the **Close Window**  icon in the top-right corner of the Report palette.

8.2.3. Shortcut Key

You can also press **Ctrl - R** on the keyboard to open and close the **Report** palette.

8.3. Display a Report

When you select a patient in the Work Modes or Patient Jacket palettes, the patient's report is displayed in the **Report** palette. You may need to scroll to view the whole report.

1. Select a patient exam from either the Work Modes or Patient Jacket palette.
2. Open the Report palette.

   The report information for the selected exam is displayed.

8.4. Transcribe a Report

If you have the proper privileges, you may enter, modify, append or delete the text of a displayed exam report. You may modify or delete any existing text in a report that is not read-only. Read-only text appears on dark background. Text that may be modified appears on a light background.

1. Select a patient exam from either the Work Modes or Patient Jacket palette.
2. Open the Report palette.

   The patient information is displayed in the Report palette.
3. Select a report template from the **Standard Reports** pull-down menu. These standard reports are based on the current exam's procedure code.

   The standard report templates are created in the Exam Manager application. Please refer to the Exam Manager application's online help for detailed instructions on creating templates.
4. Place the mouse cursor in the text entry area and click the left mouse button.
5. Type the report information into the text area.
6. Select one of the approval options from the **Report Approval** pull-down menu.

8.5. Edit a Report

If you have the proper privileges, you may edit the text of a displayed exam report. You may modify or delete any existing text in a report that is not read-only. Read-only text appears on a dark background. Text that may be modified appears on a light background.

1. Select a patient exam from either the Work Modes or Patient Jacket palette.
2. Open the Report palette.

   The patient information is displayed in the Report palette.
3. Click on the **Edit** button.

   The Append section is displayed.
4. Enter the new additional report information.
5. Click on the **Edit** button again when you are done to save your changes.

8.6. Print a Report

You can click on the **Print** icon to print a copy of the report to a workstation printer.

1. Select a patient exam from either the Work Modes or Patient Jacket palette.
2. Open the Report palette.

   The patient information is displayed in the Report palette.
3. Click on the **Print** button at the bottom of the Report palette.

   The Print dialog is displayed.
4. Select the printer to which you want to print the report.
5. Enter the number of copies you wish to print.
6. Click on **OK**.

8.7. Mark Exam Dictated

After you are finished dictating an exam, you may change the status to “Dictated.”

1. Display your approval queue in the Work Modes palette.
2. Select the exam with the report you wish to dictate.
3. Open the Report palette.

   The selected exam’s report is displayed in the Report palette.
4. Dictate the report.
5. Click on the **Set Exam Status** drop-down menu and select **Mark Dictated**.

8.8. Mark Exam Verified

After you are finished verifying an exam, you may change the status to “Verified.”

1. Display your approval queue in the Work Modes palette.
2. Select the exam with the report you wish to verify.
3. Open the Report palette.

   The selected exam’s report is displayed in the Report palette.
4. Verify the exam.
5. Click on the **Set Exam Status** drop-down menu and select **Mark Verified**.

8.9. Mark Exam Transcribed

After you are finished transcribing an exam, you may change the status to “Transcribed.”

1. Display your approval queue in the Work Modes palette.
2. Select the exam with the report you wish to transcribe.
3. Open the Report palette.

   The selected exam’s report is displayed in the Report palette.
4. Transcribe the report.
5. Click on the **Set Exam Status** drop-down menu and select **Mark Transcribed**.

8.10. Approve Reports

8.10.1. Approval Overview

The approval process starts at your approval queue. Each approver has their own approval queue. Reports for which you are designated as an approver appear in your queue automatically. You view your approval queue from the Work Modes palette.

When you approve reports, you have the following options:

Approval Option	Description
Approve & Forward	Only available to the first approver on the approval list. Select this option to approve the report and forward it to the next approver’s approval queue.
Approve & Complete	Select this option to change the status of the report to “Complete.” If there is a second approver on the list, the report is not forwarded to their queue. In effect, choosing this option deletes the second approver from the approval loop of the report.
Forward Only	Only available to the first approver on the approval list. This option forwards the report to the next approver on the approval list without marking your approval. With this option, you and the second approver trade places in the approval list. Once the second reviewer approves the report, it is forwarded back to your approval queue. If you do not want it returned to you, you must remove your name from the approval list.

8.10.2. Locate Your Approval Queue

Your queue only contains the exams whose transcribed reports you are assigned to approve.

1. Open the Work Modes palette.
2. Click on the **Worklist Selector** drop-down field.

   If this is your first time using the Workstation, you must first populate the Worklist Selector in the Utilities palette.
3. Select your approval queue among the displayed worklists.
4. A list of exams waiting for your approval is displayed in the Worklist Area of the Work Modes palette.

8.10.3. Approve a Report

1. Display your approval queue in the Work Modes palette.
2. Select the exam with the report you wish to approve.
3. Open the Report palette.

   The selected exam's report is displayed in the Report palette.
4. Make any necessary changes to the report.
5. Click on the **Report Approval** drop-down menu and select an approval option.

Approval Option	Description
Approve & Forward	Only available to the first approver on the approval list. Select this option to approve the report and forward it to the next approver's approval queue.
Approve & Complete	Select this option to change the status of the report to "Complete." If there is a second approver on the list, the report is not forwarded to their queue. In effect, choosing this option deletes the second approver from the approval loop of the report.
Forward Only	Only available to the first approver on the approval list. This option forwards the report to the next approver on the approval list without marking your approval. With this option, you and the second approver trade places in the approval list. Once the second reviewer approves the report, it is forwarded back to your approval queue. If you do not want it returned to you, you must remove your name from the approval list.

8.10.4. Select Approvers

You can select or modify the reports approvers via the **Report Approval** drop-down menu in the Report palette.

1. Open the Report palette.
2. Click on the **Report Approval** drop-down menu and select **Select Approvers**.

   The Select Approvers dialog box appears. The Users list displays the user IDs of eligible approvers. The Approvers list displays the currently selected approvers. The first

selected approver in the Approvers list receives the report in their approval queue first.
3. Select a user from the Users list to approve the exams.
4. Click on the right arrow button to add the user to the Approvers list.

   You can also double-click on a user to automatically add the user to the Approvers list.
5. Click on **OK** when you are done.

8.10.5. Remove Approvers

You can remove or modify the report approvers with the **Report Approval** drop-down menu in the Report palette.

1. Open the Report palette.
2. Click on the **Report Approval** drop-down menu and select **Select Approvers**.

   The Select Approvers dialog box is opened. The User lists displays the user IDs of eligible approvers. The Approvers list displays the currently selected approvers.
3. Select a user you want to remove the Approvers list.
4. Click on the left arrow button to remove the user from the Approvers list.
5. You can also double-click on a user to automatically remove the user from the Approvers list.
6. Click on **OK** when you are done.

Chapter 9. Utilities Palette

9.1. Utilities Palette Overview

From within the **Utilities** palette you can set your own particular preferences, such as showing, hiding, and resizing screen elements. You can also customize your monitor layout and create your own default display protocols.

9.2. Open/Close the Utilities Palette

9.2.1. Open the Utilities Palette

1. Move the mouse cursor to the bottom of the Centricity™ Workstation screen to display the Workstation **Taskbar**.
2. Click on the **Utilities** button.

9.2.2. Close the Utilities Palette

- Click on the **Close Window** icon in the top-right corner of the Utilities palette.

9.2.3. Shortcut Key

You can also press **Ctrl - U** on the keyboard to open and close the Utilities palette.

9.3. Customize Worklists

9.3.1. Define your Worklists

When you log into Centricity™ Workstation for the first time, you need to identify what worklists you want to view from the Work Modes palette. You can modify your settings at any time and see your changes without having to restart the application.

1. Open the Utilities palette.
2. Click on the **Worklist** tab.
3. Click on either the **Browse** tab to select the worklists you want to view in the browse mode of the Work Modes palette. Click on the **Dictate** tab to select the worklists you want to view while in the dictate macro. Click on the **Verify** tab to select the worklist you wish

to access in the verification macro.

4. From the selection list on the left side of the screen, click on the worklist you wish to add the **My Worklists** list.

   Some worklists may be contained in folders. Single-click on a folder to open it and display the worklists in the folder.
5. Click on the **Add** button to move the selected worklist to the **My Worklists** list.

Note: You can also click and drag a worklist from the list on the left side of the screen into the My Worklists list.

9.3.2. Remove Worklists

You can modify your selected worklists at any time and see your changes without having to restart the application.

1. Open the Utilities palette.
2. Select the **Worklist** tab.
3. Click on either the **Browse** tab to select the worklists you want to view in the browse mode of the Work Modes palette. Click on the **Dictate** tab to select the worklists you want to view while in the dictate macro. Click on the **Verify** tab to select the worklist you wish to access in the verification macro.
4. In the **My Worklists** list, click on the worklist you wish to remove.
5. Click on the **Remove** button.

9.3.3. Configure Quick Access Worklist Buttons

The Quick Access Worklist buttons are located above the My Worklists list. Quick Access Worklist buttons are used in the Work Modes palette to automatically update the Worklist Area with the chosen worklist.

A button that is not defined is labeled "Unused." You can configure the Quick Access Worklist buttons to display your frequently used worklists. Each button's label matches the name of the worklist it displays. If the full name of the worklist is not displayed on the button, holding the mouse cursor over the button displays a tool tip that shows the full name of the worklist.

Any worklist displayed in the available worklist list can be made into a Quick Access Worklist button.

1. Open the Utilities palette.
2. Click on the **Worklist** tab.
3. Click on either the **Browse** tab to select the worklists you want to view in the browse mode of the Work Modes palette. Click on the **Dictate** tab to select the worklists you want to view while in the dictate mode of the Work Modes palette. Click on the Verify tab to select the worklists you want to view while in the verification mode of the Work Modes palette.
4. From the selection list on the left side of the screen, click on the worklist you wish to make into a Quick Access Worklist button.

   Some worklists may be contained in folders. Single-click on a folder to open it and display the worklists in the folder.
5. Click and hold the mouse button on the selected worklist and drag the worklist over a

Quick Access Worklist button and release the mouse button.

The label of the button automatically changes to reflect the name of the worklist and is configured to display that worklist in the Work Modes palette. The first (left-most) button is used to specify the user's default worklist. The default worklist is always displayed when you first log into Centricity™ Workstation.

9.4. DDP Preferences

9.4.1. DDPs Setup Overview

You create Default Display Protocols (DDPs) under the **DDP Setup** tab in the Utilities palette. The DDP Setup tab has several areas for selecting, modifying and creating DDPs. In the **Assistant** section you can use the DDP Setup Utility to walk through on-screen instructions for modifying an existing DDP or creating a new DDP.

The **DDP Select** section displays a list of available DDPs based on a user that you select. Your available DDPs are displayed by default.

The **Display Protocol Workspace** section provides virtual monitors to create the DDPs layout information.

The **DDP Description** section displays the modality and procedure information that is used when the DDP is applied to an opened exam.

You can select values for region specific parameter information in the **Matching Parameters** section. These values are used to determine the exam series position when it is opened.

The **Tool Parameters** section provides region specific tool information for Window/Level, Magnification, Invert and Orientation. These values are used to determine what tools are applied to each region when an exam is displayed.

9.4.2. Using the DDP Assistant

The DDP Assistant, located under the DDP Setup tab in the Utilities palette, provides on-screen instructions for creating and saving DDPs.

DDP Assistant

1. Open the Utilities palette.
2. Click on the **DDP Setup** tab.

   In the Assistant section you will see the following message:

   "I will be your Assistant. Press the Next button to begin."
3. Click on the **Next** button in the Assistant text area.

   The DDP Select section is highlighted with a white border.

DDP Select

1. Click on the **Create New** button in the DDP Select section.

2. Click on the **Next** button in the Assistant text area.

   The Display Protocol Workspace section is highlighted with a white border. In this section you will use the hot zone buttons above the virtual monitors to configure the monitors and regions.

Display Protocol Workspace

Configure the Monitor Layout

1. Place the mouse cursor on the **Monitor** hot zone button to display a drop-down menu.

   The Monitor hot zone allows you to change the number of monitors in the current DDP.
2. Select the appropriate number of monitors to be used with the DDP.

Configure the Image Series Display Layout

1. Click on a monitor icon in the Display Protocol Workspace section.

   The selected monitor is highlighted in white.
2. Place the mouse cursor on the **Region** hot zone button to display a drop-down menu.

   The Region hot zone allows you to change the number of regions in a selected monitor.
3. Select the desired number of regions for that monitor.

Configure the Number of Images to Display

1. Select a region in the monitor icon in the Display Protocol Workspace section.

   The selected region is highlighted in white.
2. Move the mouse cursor over the **Images** hot zone button to display a drop-down menu.

   The Images hot zone allows you to change the number of images displayed in the currently selected region.
3. Select the desired up count for the region.

Configure the Types of Series Connectors

1. Select a region in the monitor icon in the Display Protocol Workspace section

   The selected region is highlighted in white.
2. Move the mouse cursor over the **Connect** hot zone button to display to display a drop-down menu.

   You can create connections for Links, Multi-Monitors, and Cross References. When a connection is created, the region display a “L,” “M,” or “X” in the lower left corner of the monitor icons.
3. Select the type of connection you would like to make.

   The available regions that can be connected are highlighted with a gray square.
4. Click on the region(s) you wish to connect.
5. Click on any non-highlighted region to finish the connection.

   To break or cancel a connection. Click on the region that is connected and place the mouse cursor over the **Connections** hot zone button. From the drop-down menu select the appropriate break. The connection markers are removed from the regions.

Example: If you wish to break a link connection, click on a region with a "L" marker. Place the mouse cursor over the Connect hot zone button and select Break Link.

6. Click on the **Next** button in the Assistant text area.

   The DDP Description section is highlighted with a white border.

9.5. DDP Description

1. Check the **Save the Current Display Protocol as default** check box to have the DDP applied as the default DDP for exams with the selected modality and procedures.

   If the check box is not selected, the DDP is not applied to any exam by default and the **Body Part** and **Procedure** list boxes are disabled.
2. Click on the **Modality** drop-down field and select the modality for which the DDP will be used.
3. In the **Body Part** list box, place a check mark in front of each body part that you wish to associate with the DDP.
4. In the **Procedure** list box, place a check mark in front of each procedure that you wish to use with the DDP.
5. Click on the **Next** button in the Assistant text area.

   The Matching Parameters section is highlighted with a white border.

9.6. Matching Parameters

1. Click on a region in the Display Protocol Workspace section so that it is highlighted.
2. In the Matching Parameters section, enter the appropriate values for the text fields.

   The text fields are dependent on what modality is selected in the DDP Description section. The values entered into the available text fields should describe the series that should be loaded into the selected region.
3. Click on the **Next** button in the Assistant text area.

   The Tools Parameter section is highlighted with a with a white border.

9.7. Tools Parameter

1. Click on a region in the Display Protocol Workspace section so that it is highlighted.

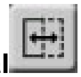
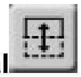
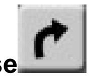
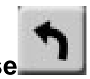
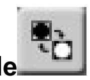
9.7.1. Set the Window/Level Values

1. Select the check box to the right of the **Window** and **Level** fields to set Window/Level values for the selected region.
2. Click on the **Presets** drop-down field and select a preset Window/Level.

9.7.2. Set the Magnification Values

1. Select the check box to the right of the **Magnification** field.
2. Enter a magnification value for the selected region.

9.7.3. Set the Image Orientation and Color

1. Select the check box to the right of the sample image to change to set the orientation and color for the selected region when an image is displayed.
2. Click on the **Flip Horizontal** button to have the images for the selected region displayed flipped horizontally.
3. Click on the **Flip Vertical** button to have the images for the selected region displayed flipped vertically.
4. Click on the **Rotate 90° Clockwise** button to automatically rotate the images for the selected region when opened.
5. Click on the **Rotate 90° Counter-Clockwise** button to automatically rotate the images for the selected region when opened.
6. Click on the **Invert Gray Scale** button to invert the images when they are opened for the selected region.
7. Click on the **Next** button in the Assistant text area.

9.8. Save

1. Click on the **Save** button to save the newly created DDP.

9.8.1. Manually Create a DDP

You can use the system default DDPs that are factory installed on your system to create your own DDPs. You can save user-created layouts for different modalities, body parts, and procedure codes.

Note: Saved display protocols cannot be modified. Any changes to a saved protocol must be saved using a different name.

1. Open the Utilities palette.
2. Click on the **DDP Setup** tab.
3. Click on the **Create New** button in the DDP Select section.

9.9. Display Protocol Workspace

In the Display Protocol Workspace section you use the hot zone buttons above the virtual monitor icons to configure the monitors and regions when displaying an exam with a DDP.

9.9.1. Configure the Monitor Layout

1. Place the mouse cursor on the **Monitor** hot zone button to display a drop-down menu.

   The **Monitor** hot zone allows you to change the number of monitors in the current DDP.
2. Select the appropriate number of monitors to be used with the DDP.

9.9.2. Configure the Image Series Display Area Layout

1. Click on a monitor icon in the Display Protocol Workspace section.

   The selected monitor is highlighted in white.
2. Place the mouse cursor on the **Region** hot zone button to display a drop-down menu.

   The **Region** hot zone allows you to change the number of regions in a selected monitor.
3. Select the desired number of regions for that monitor.

9.9.3. Configure the Number of Images to Display

1. Select a region in the monitor icon in the Display Protocol Workspace section.

   The selected region is highlighted in white.
2. Move the mouse cursor over the **Images** hot zone button to display a drop-down menu.

   The **Images** hot zone allows you to change the number of images displayed in the currently selected region.
3. Select the desired up count for the region.

9.9.4. Configure the Types of Series Connections

1. Select a region in the monitor icon in the Display Protocol Workspace section.

   The selected region is highlighted in white.
2. Move the mouse cursor over the **Connect** hot zone button to display to display a drop-down menu.
3. You can create connections for Links, Multi-Monitors, and Cross References. When a connection is created, the region display a “L,” “M,” or “X” in the lower left corner of the monitor icon.
4. Select the type of connection you would like to make.

   The available regions that can be connected are highlighted with a gray square.
5. Click on the region(s) you wish to connect.
6. Click on any non-highlighted region to finish the connection.

   To break or cancel a connection. Click on the region that is connected and place the mouse cursor over the **Connect** hot zone button. From the drop-down menu select the appropriate break. The connection markers are removed from the regions.

Example: If you wish to break a link connection, click on a region with the “L” marker. Place the mouse cursor over the Connections hot zone button and select Break Link from the drop-down menu.

9.10. DDP Description

1. In the DDP Description section, check the **Save the Current Display Protocol as default** check box to have the DDP applied as the default DDP for exams with the selected modality and procedures.

   If the check box is not selected, the DDP is not applied to any exam by default and the **Body Part** and **Procedure** list boxes are disabled.
2. Click on the **Modality** drop-down field and select the modality for which the DDP will be used.
3. In the **Body Part** list box, place a check mark in front of each body part that you wish to associate with the DDP.
4. In the **Procedure** list box, place a check mark in front of each procedure that you wish to use with the DDP.

9.11. Matching Parameters

1. Click on a region in the **Display Protocol Workspace** section so that it is highlighted.
2. In the **Matching Parameters** section, enter the appropriate values for the text fields.

   The text fields are dependent on what modality is selected in the DDP Description section. The values entered into the available text fields should describe the series that should be loaded into the selected region.

9.12. Tools Parameter

1. Click on a region in a monitor icon in the Display Protocol Workspace section so that it is highlighted.

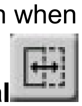
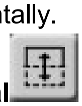
9.12.1. Set the Window/Level Values

1. Select the check box to the right of the **Window** and **Level** fields to set Window/Level values for the selected region.
2. Click on the **Presets** drop-down field and select a preset Window/Level.

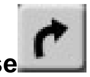
9.12.2. Set the Magnification Values

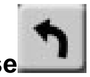
1. Select the check box to the right of the **Magnification** field.
2. Enter a magnification value for the selected region.

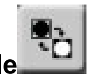
9.12.3. Set the Image Orientation and Color

1. Select the check box to the right of the sample image to change to set the orientation and color for the selected region when an image is displayed.
2. Click on the **Flip Horizontal** button to have the images for the selected region displayed flipped horizontally.
3. Click on the **Flip Vertical** button to have the images for the selected region

displayed flipped vertically.

4. Click on the **Rotate 90° Clockwise** button to automatically rotate the images for the selected region when opened.

5. Click on the **Rotate 90° Counter-Clockwise** button to automatically rotate the images for the selected region when opened.

6. Click on the **Invert Gray Scale** button to invert the images when they are opened for the selected region.

9.13. Save the DDP

1. Click on the **Save** button to save the newly created DDP.

9.13.1. Copy a DDP

1. Open the Utilities palette.
2. Click on the **DDP Setup** tab.
3. Click on the **DDPs for** drop-down field and select a user from the list.

   The selected user's DDP information is displayed in a drop-down menu beneath the **DDPs for** drop-down field.
4. Click on the drop-down menu beneath the **DDPs for** drop-down field and select the DDP you wish to copy.
5. Click on the **Copy** button.

   If the name of the DDP you are copying is the same as one of your existing DDPs, the Copy Display Protocol As window is displayed.
6. Enter a new name for the DDP you are copying and click on **OK**.

   The newly named DDP is copied to your DDP list.

9.13.2. Delete a DDP

1. Open the Utilities palette.
2. Click on the **DDP Setup** tab.
3. Select one your DDP that you wish to delete from the drop-down menu beneath the **DDPs for** drop-down menu.
4. Click on the **Delete** button.

   A pop-up window is displayed and asks if you are sure you want to delete the DDP.
5. Click on **OK** to delete the DDP.

9.13.3. Modify an Existing DDP

1. Open the Utilities palette.
2. Click on the **DDP Setup** tab.
3. Click on the **DDPs for** drop-down field and select a user from the list.

The selected user’s DDP information is displayed in a drop-down menu beneath the **DDPs for** drop-down field.

4. Click on the drop-down menu beneath the **DDPs for** drop-down field and select the DDP you wish to modify.
5. Modify the DDP settings.

9.13.4. Copy a DDP Region Format

A DDP's monitor region configuration can also be set by copying an existing region.

1. Open the Utilities palette.
2. Click on the **DDP Setup** tab.
3. Click on the **DDPs for** drop-down field and select a user from the list.

   The selected user’s DDP information is displayed in a drop-down menu beneath the **DDPs for** drop-down field.
4. Click on the drop-down menu beneath the **DDPs for** drop-down field and select the DDP whose region you wish to copy.
5. Select a region in the monitor icon in the Display Protocol Workspace section.

   The selected region is highlighted in white.
6. Click and hold the left mouse button on the region you would like to copy.
7. Drag the mouse into the region that you would like to copy it to.
8. Release the mouse button inside the region.

   That region should now contain the same up count, matching parameters and total parameters of the copied region.

9.14. DDP Favorites

Centricity™ Workstation allows you to select which DDPs you would like to access from the **Display Functions** drop-down menu in the **Function Bar** when viewing exams.

1. Open the Utilities palette.
2. Click on the **DDP Favorites** tab.
3. Select either the **GE Display Protocol** or **User Display Protocol** radio button to display a list of DDPs in the **Available User Protocols** list box from which you can select your favorite DDPs.

   You can toggle back and forth between the lists and select DDPs from both lists.
4. Select the DDP you wish to add to your favorites list and click on the **Add to Favorites** button.

   The selected DDP is moved to the **Selected Favorites** list box.
5. In the **Selected Favorites** list box, highlight a DDP and click on either the **Move Up** or **Move Down** button to place the DDPs in the order you would like for them to appear in the **Display Functions** drop-down menu.

9.15. Customize the Tools Palette

You can adapt the Tools palette with tools you use the most based on each workstation modality. When saved, these tools are saved along with your user preferences and are always displayed when exams from that modality are displayed.

1. Open the Utilities palette.
2. Click on the **Tool Preferences** tab.
3. Click on the **Modality** drop-down menu and select the modality for which the Tools palette will be used.
4. From the tool list on the left side of the screen, single-click on the tool you wish to add to your Tools palette.
5. Click on the **Add to Palette** button to move the tool to the tool list on the right side of the screen.

   To remove a tool from a Tools palette, single-click on the tool from the tool list on the right side of the screen and click on the **Remove from Palette** button.
6. To reorder the display of the tool in the Tools palette, single-click on the tool in the tool list on the right side of the screen and click on the **Move Up** and/or **Move Down** button to reorder the display of the tools in the Tools palette.

9.16. Exam Closing Options

In order to save exams and any measurements or annotations that you make, you need to enable Centricity™ Workstation's save functions.

1. Open the Utilities palette.
2. Click on the **Preferences** tab.
3. Click on the **System Preferences** tab.
4. Select the **Prompt to Save Image Before Closing** check box to be prompted to save exams when they are closed

   If this option is selected, then when you close an exam that was modified, a dialog box is displayed and asks you to save the changes. If this check box is not selected, then you are not prompted to save exams when they are closed, and any modifications are lost.

   When you select this option, the **Save Changes to Exams and Comparisons When Closing Exam** check box becomes de-activated.
5. Select the **Save Changes to Exams and Comparisons When Closing Exam** check box to automatically save an exam when you close it.

Warning: If you do not select this option and the Prompt to Save Image Before Closing check box is not selected, then when you close an exam, you are not prompted to save and any changes you made to the exam are not saved, and are lost when you close an exam.

9.17. Change Password

You may change your login password at any time. The new password remains active until you or the system administrator changes it again.

Note: Passwords are case-sensitive!

1. Open the Utilities palette.
2. Click on the **Preferences** tab.
3. Click on the **System Preferences** tab.
4. Type your current password in the **Old Password** field.
5. Type your new password in the **New Password** field.
6. Type your new password again in the **Confirm New Password** field.

   This entry must match your entry in the **New Password** field exactly.
7. Click on the **Change Password** button to save you new password.

9.18. Image Display Order

When you select to display an exam, you can have Centricity™ Workstation display the order of the images by either the image's number of by the patient's location on the exam table.

1. Open the Utilities palette.
2. Click on the **Preferences** tab.
3. Click on the **Display Preferences** tab.
4. In the Image Display Order section, select one of the following ordering options:

- Image Number
- Table Location

9.19. Enable Cross Referencing of ACR-NEMA Images

If you wish to cross reference ACR-NEMA images, you must select the **Enable Cross-Referencing of ACR-NEMA Images** check box. When you select this check box, you are presented with a warning message indicating that the locations may not be correct.

Caution: With ACR-NEMA images, it is not possible to guarantee that cross reference lines or multiplanar localizations are accurate. Therefore, by default, you may not cross reference these types of images.

This user preference is not saved when you log out of the Workstation. It must be activated each time you wish to use it.

1. Open the Utilities palette.
2. Click on the **Preferences** tab.
3. Click on the **Display Preferences** tab.
4. In the Display Options section, select the **Enable Cross-Referencing of ACR-NEMA Images** check box.

   You are presented with a message that states that the locations may not be correct.

5. Click on **OK**.

9.20. Show Significant Images by Default

When you open a patient's exam, you can have Centricity™ Workstation only display the images that are marked as significant.

1. Open the Utilities palette.
2. Click on the **Preferences** tab.
3. Click on the **Display Preferences** tab.
4. In the Display Options section, select the **Show SIGnificant Images by Default** check box.

9.21. Mark Images Significant When Annotating

In the Centricity™ Workstation user preferences, you can select to have images automatically marked as significant when you annotate them.

1. Open the Utilities palette.
2. Click on the **Preference** tab.
3. Click on the **Display Preferences** tab.
4. In the Display Options section, select the **Mark as SIGnificant When Annotation is Created** check box.

9.22. Show Cobb Angle Calculation by Default

In the Centricity™ Workstation user preferences, you can select to have the Cobb angle calculations display when an angle is created.

1. Open the Utilities palette.
2. Click on the **Preferences** tab.
3. Click on the **Display Preferences** tab.
4. In the Display Options section, select the **Show Cobb angle calculation by default** check box.

9.23. Enable Synch-ing Stacks Features

This feature allows you to select multiple Image Display Series that are all in the Stack mode and synchronize them so that all of the series will show the same relative anatomical location.

Enable Synch-ing Stacks makes use of the DICOM attributes associated with the image to find an image on the other series that is anatomically close enough to be treated as a match.

1. Open the Utilities palette.
2. Click on the **Preferences** tab.
3. Click on the **Display Preferences** tab.
4. In the Display Options section, select the **Enable Synch-ing Stacks** check box to enable this feature.

9.24. Image Grouping Options

You can set your images, in a modality, to be grouped by DICOM series or parameters.

1. Open the Utilities palette.
2. Click on the **Preferences** Tab
3. Click on the **Display Preferences** tab.
4. In the Image Grouping section, select a modality from the **Modality** pull-down menu.
5. Select on the image grouping options:

- DICOM Series
- Parameters

9.25. Increase the Window/Level Values

Mouse movements associated with the Window/Level tool are user-configurable. You may select the mouse movements to use when increasing the window/level of an image.

1. Open the Utilities palette.
2. Click on the **Preferences** tab.
3. Click on the **View Preferences** tab.
4. In the Window/Level Options section, select the radio button for the mouse movements you wish to use to increase the window/level values.

   There are two choices:

- Mouse moves right for window \ up for level
- Mouse moves left for window \ down for level

9.26. Window/Level Decision Path

You can select to use the Window/Level values that are part of the exam header or have Centricity™ Workstation calculate the appropriate Window/Level values for you.

1. Open the Utilities palette.
2. Click on the **Preferences** tab.
3. Click on the **View Preferences** tab.
4. In the Window/Level Options, select the radio button for:

Saved Values - Algorithm:	If the Window/Level values are saved with the exam, then the system will use them. If there are no Window/Level values, the system will calculate them for you.
Saved Values - DICOM Header/Algorithm:	If the Window/Level values are saved with the exam then the system will use them. If the DICOM header contains Window/Level values, the system will use them. If there are no Window/Level values in the header, the system will calculate them for you.

9.27. Cine Options

You can choose between optimized navigation or optimized diagnostic image quality when using the Manual Cine tool. For faster scrolling, select **Image Navigation.** This will decrease the image loading time but may also result in decreased image quality. If you want high quality images and are not concerned with the scrolling speed, select **Diagnostic Image Quality**.

1. Open the Utilities palette.
2. Click on the **Preferences** tab.
3. Click on the **View Preferences** tab.
4. In the Cine Options section, select one of the following:

- Image Navigation (faster scrolling, but lower quality))
- Diagnostic Image Quality (higher quality, but slower scrolling)

9.28. Magic Glass Configuration

The default Magic Glass Region window size and magnification ratio are specified via slider bar. The slider values represent the percentage of the image size that is covered by the window. Changes to the Magic Glass take effect immediately.

1. Open the Utilities palette.
2. Click on the **Preferences** tab.
3. Click on the **View Preferences** tab.
4. For the **Magic Glass Regions**, click on the slider bar with the left mouse button and drag the slider to the desired percentage marker.
5. For the **Magic Glass Ratio**, click on the slider bar with the left mouse button and drag the slider to the desired ratio marker.

9.29. Font Control

The fonts used on screen and on printed reports may be changed using the Font Control user preference setting.

1. Open the Utilities palette.
2. Click on the **Preferences** tab.
3. Click on the **View Preferences** tab.
4. In the Font Control section, click on the **Component** drop-down field and select the Centricity™ Workstation component whose font you want to change.
5. Click on the **Font** drop-down field and select the font style (typeface) you want to use.
6. Click on the **Type** drop-down field and select a variation for the font (bold, plain, italics)
7. Click the **Size** drop-down field and select a point size for the font.

9.30. Window/Level Preset Control Options

There are a number of preset Window/Level settings that can be applied by using the keyboard of the **Image Functions** drop-down menu in the **Function Bar**. Numbers 1 through 6 are used to apply a preset which is specific to the modality of the images. Numbers 7 through 0 are used to apply a general preset which may act on an exam from any modality.

1. Open the Utilities palette.
2. Click on the **Preferences** tab.
3. Click on the **View Preferences** tab.
4. Select the modality you wish to modify from the **Modality** Name drop-down field.
5. Select the modality preset you wish to modify from the **Preset** Label drop-down field.
6. Type in a new window value.
7. Type in a new level value.
8. Click the **Change Preset** button to save your selections.

Chapter 10. Tools Palette

10.1. Overview of Tools Palette

There are two types of tool palettes in the Centricity™ Workstation Image View Area: **Standard** and **Extended**.

The **Standard** Tools Palette can be accessed from the Workstation **Taskbar** or by right-clicking in the Image View Area. The Standard Tools palette consists of 16 user-configurable tools.

The **Extended** Tools Palette is displayed when you click on the **down arrow** button on the Standard Tools Palette. The Extended Tools Palette displays all the image manipulations tools, including all the tools in the Standard Tools Palette.

You can configure the Tool palette with tools you use the most based on each workstation modality. When saved, these tools are saved along with your user preferences and are always displayed when exams from that modality are displayed.

The Tools palette is only accessible when exam images are displayed in the Image View Area.

10.2. Open/Close the Tools Palette

The Tools palette is only accessible when images are displayed in the Image View Area.

10.2.1. Open the Tools Palette from the Workstation Taskbar:

1. Move the mouse cursor to the bottom of the Centricity™ Workstation screen to display the Workstation **Taskbar**.
2. Click on the **Tools** button.

10.2.2. Open the Tools Palette from the Image View Area:

1. Right-click on an image in the Image View Area.
2. Once the Tools Palette is displayed, any tool may be selected by clicking on it with the left mouse button. Once you select a tool, the pop-up Tools Palette is closed.

10.2.3. Close the Tools Palette

- Click on the **Close Window** icon in the top-right corner of the Tools palette.

10.3. Types of Tools

Centricity™ Workstation has two general types of image manipulation tools: action tools and state tools.

Action tools are used to manipulate selected images automatically without any user interaction. When you select an action tool, the tool performs the operation immediately. After the action is completed, the tool selection returns to the previously selected tool. Examples of this type of tool are the Flip Horizontal and Flip Vertical tools.

State tools require user interaction in order to manipulate a selected image. State tools remain selected until you select another tool. Examples of this type of tool are the Text Annotation and Magic Glass tools.

10.4. Propagation

Propagation refers to the action of making a change to one image and having that change automatically occur for other images. To apply a propagation rule, hold down a modifier key prior to completing the modification. Do not hold down the modifier key the entire time you are making the change to the image. Simply hold down the modifier key prior to completing the modification.

Note: When using the Zoom 2x, Zoom 1/2x, Rotate, Flip, Invert Grayscale, and Reset Image tools, any changes made are propagated to all selected images in the active image series regardless of the propagation rules.

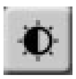
The following table shows the propagation effect for each modifier key.

No Modifier	Alt	Shift	Ctrl	Ctrl - Shift
Propagates to all selected images in the current series	Does not propagate	Propagates to all images in the current series	Propagates to all selected images in the active exam	Propagates to all images in all displayed exams for the current patient

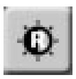
10.5. Image Manipulation Tools Overview

The **Selection** tool is the default selection on the Tools Palette when the Image View Area is first displayed in a session. It allows you to select images to be manipulated by other tools. (State Tool)

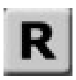
The **Significant Image Selection** tool is used to mark individual images as “significant.” These images are added to the Significant Image image series. (State Tool)



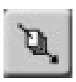
The **Window/Level** tool controls the image contrast and brightness. (State Tool).



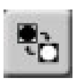
The **Reset Window Level to Last Saved** tool re-displays the image with the same window and level settings from when it was last saved. Cannot be used with the middle mouse button. (Action Tool)



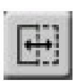
The **Reset Image to Last Saved** tool displays the image in the same state as when it was last saved. Cannot be used with the middle mouse button. (Action Tool)



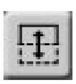
The **Manual Cine** tool is used to scroll through images in Stack mode. (State Tool)



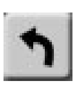
The **Invert Gray Scale** tool displays the image with the gray scale values inverted. Cannot be used with the middle mouse button. (Action Tool)



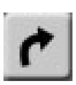
The **Flip Horizontal** tool flips the image horizontally on the vertical axis. Cannot be used with the middle mouse button. (Action Tool)



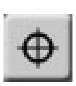
The **Flip Vertical** tool flips the image vertically on the horizontal axis. Cannot be used with the middle mouse button. (Action Tool)



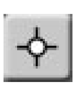
The **Rotate 90° CCW** tool displays the image rotated 90 degrees counter clockwise. Cannot be used with the middle mouse button. (Action Tool)



The **Rotate 90° CW** tool displays the image rotated 90 degrees clockwise. Cannot be used with the middle mouse button. (Action Tool)



The **Multiplanar Localization** tool allows you to identify a point across image series within a multi-series exam (typically CT or MR). (State Tool)



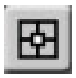
The **Pixel Lens** tool displays the pixel values and X and Y locations of the mouse pointer on the image. The information is updated immediately as you move the mouse over the image. Cannot be used with middle mouse button. (State Tool)

The **Pan** tool moves a displayed image within its individual display region (useful with magnified or large images). (State Tool)

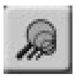
The **Magic Glass** tool displays a viewport that magnifies, manipulates, or inverts the gray scale of a subsection of an image. (State Tool)

The **Zoom 2x** tool increases the image size to twice its current size. Cannot be used with the middle mouse button. (Action Tool)

The **Zoom ½x** tool reduces the image size to half its current size. Cannot be used with the middle mouse button. (Action Tool)

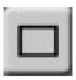


The **Fit to Display Region** tool allows you to enlarge or reduce an image so that the entire image fits within the image display region. Cannot be used with the middle mouse button. (Action Tool)

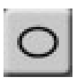


The **Continuous Zoom** tool magnifies and minimizes the image for better viewing. (State Tool)

The **Last Zoom Exact Value** tool displays the last value used with the Zoom Exact Value tool. This allows you to click on the tool to reapply the same zoom ratio. Cannot be used with the middle mouse button. (Action Tool)

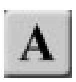


The **Rectangular ROI** tool allows you to draw a rectangular region of interest on a displayed image. (State Tool)

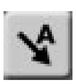


The **Oval ROI** tool allows you to draw an oval region of interest on a displayed image. (State Tool)

The **Polygon ROI** tool allows you to draw a free-form region of interest on a displayed image. (State Tool)

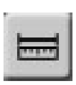


The **Text Annotation** tool is used to add textual annotations to images. (State Tool)

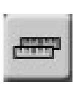


The **Arrow Annotation** tool is used to draw arrows on displayed images. These can be used in conjunction with text annotations to draw attention to particular areas of an image. (State Tool)

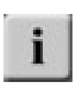
The **Measure Angle** tool is used to make angular measurements directly on a displayed image. (State Tool)



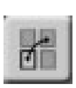
The **Measure Distance** tool allows you to measure the distance between two points on an image. (State Tool)



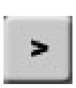
The **Measure Calibration** tool allows you to add a distance measurement frame of reference for the image. (State Tool)



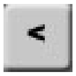
The **Image Information** tool displays a window containing the header information for the selected image(s). Cannot be used with middle mouse button. (Action Tool)



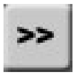
The **Drag and Drop Images** tool allows you to change the order of images within the image series display area. (State Tool)



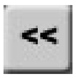
The **Next Image** tool moves each of the displayed images in the series over one space to the left. (Action Tool)



The **Previous Image** tool moves each of the displayed images in the series over one space to the right. (Action Tool)



The **Next Page** tool displays the next page of the series. (Action Tool)

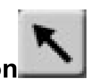


The **Previous Page** tool displays the previous page of the series. (Action Tool)

10.6. Selection

The **Selection** tool lets you select and deselect images, regions of interests, and image measurements. When you display an exam for the first time during a session, the **Selection** tool is selected by default.

10.6.1. Select an Individual Image

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Selection**  tool from the Tools Palette.
4. Place the cursor over the desired image and single-click with the left mouse button.

   The selected image is highlighted with a thin white border

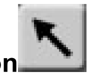
10.6.2. Select Multiple Images

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Selection**  tool from the Tools Palette.
4. Single-click on the first image you want to select.

   The selected image is highlighted with a thin white border.
5. While pressing the **Ctrl** key, click on the other images you want to select. You can also select a range of images while holding down the **Shift** key.

   All the selected images are highlighted with thin white borders.

10.6.3. Deselect an Image

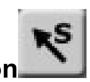
1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Selection** tool from the Tools Palette.
4. Hold down the **Ctrl** key.
5. Single-click on the image highlighted with a thin white border that you want to deselect. You can also select a range of images while holding down the **Shift** key.

   The white border is removed indicating that the image is no longer selected.

10.7. Significant Image Selection

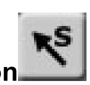
The **Significant Image Selection** tool is used to mark individual displayed images as significant. The significant images for an exam can be displayed and/or printed separately from the other images in the exam.

10.7.1. Select Significant Images

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Significant Image Selection** tool from the Tools palette.
4. Click on the image(s) you want to mark as significant.
5. Select another tool from the Tools palette to signal that you are done selecting images.

   Images that are marked as significant have the annotation “SI” displayed in the left-center of the image.

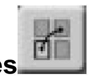
10.7.2. Deselect Significant Images

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Significant Image Selection** tool from the Tools palette.
4. Click on the significant image(s) you wish to deselect.
5. Select another tool from the Tools palette to signal that you are done de-selecting the images.

   The “SI” label is removed from the image(s) you deselected.

10.8. Drag and Drop Images

When viewing images in an image series, you are able to reorder the images in the display area with the **Drag and Drop Images** tool. Saving the exam does not preserve the new locations of the moved images.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Drag and Drop Images**  tool from the Tools palette.
4. Click on the image you wish to move and hold down the left mouse.

   The mouse cursor changes into a smaller picture of the image.
5. Drag the image to its new location and release the mouse button.

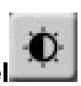
   All the images on the screen will shift, filling in the open space left by the moved image, based on where you place the image.
6. Move the mouse cursor to the top of the screen to display the Function Bar. Select **Save Current Exam** from the **Exam Functions** drop-down menu to save the exam with the new image order.

   You can also close the exam without saving the new image order by selecting **Close Current Exam and Comparison** from the **Exam Functions** drop-down menu.

10.9. Window/Level

10.9.1. Window/Level Overview

When viewing images, there may be times when you need to adjust an image's contrast or brightness.

The **Window/Level**  tool, also called the Window Width and Center tool, controls the image's window/level values, allowing you to adjust the brightness and contrast.

Each pixel value, or count, corresponds to a specific gray scale value. Adjusting the window/level values allows you to translate a given pixel value into shades of gray.

If you are using a color-enabled monitor, you can use the **Window/Level** tool to adjust the image brightness.

Note: PT exams arrive in the Centricity™ Workstation with the window/level values used on the PT Workstation. You are still able to apply additional window/level settings to the exam.

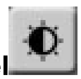
If you are displaying color images on a gray scale monitor, you are only able to display the brightness (luminance) component of the color image.

When window leveling a selected image, the changes are automatically propagated to all selected images. The **Window/Level** tool may also be applied to non-selected images. In this case, the changes are only applied to the image being manipulated.

Example: If you have a number of selected images, and only want to adjust one, hold down the Alt key while adjusting the image.

10.10. Using the Window/Level Tool

Note: If you are working with another tool, you can hold down the Alt key to change that tool's function temporarily to the Window/Level tool. Release the Alt key to restore the tool's normal function.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Window/Level** tool from the Tools palette.
4. Place the mouse cursor over the image you wish to adjust.
5. Press and hold the left mouse button.

   The Window/Level information is displayed in the lower-right corner of the image (e.g., W: 395 / L: 234).These values are automatically created as an annotation for each image. These values are always visible, regardless of whether you elect to hide image overlay information and/or other annotations.
6. Drag the mouse forward/backwards or left/right to change the window/level values.
7. The direction that the mouse is dragged may be configured as a user preference in the Utilities palette.

   To adjust the Level - Drag the mouse upwards to increase the values. Drag the mouse backwards to decrease values.

   To adjust the Window - Drag the mouse to the right to increase the values. Drag the mouse to the left to decrease the values.

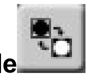
Note: Exact horizontal and vertical mouse movements are not strongly constrained.

8. Release the mouse button when you have the desired window level values.

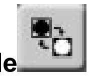
10.11. Invert Gray Scale

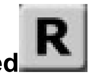
Use the **Invert Gray Scale** tool to invert the gray scale values of a selected image. Any changes you make using this tool are propagated to all selected images in the image series.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Selection** tool from the Tools palette.
4. Select an image or set of images with the **Selection** tool.

5. Select the **Invert Gray Scale** tool on the Tools palette.

   The images are changed to an inverted gray scale.

6. Click on the **Invert Gray Scale** tool again to return to the image's original gray scale values.

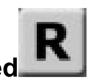
   You can also click on the **Reset Image to Last Saved**

 tool.

Note: **Clicking on the Reset Image to Last Saved tool will undo ALL changes since the exam was last saved.**

10.12. Reset Images to Last Saved

To automatically restore the selected image to how it looked when it was last saved, select the **Reset Image to Last Saved** tool from the Tools palette. Any unsaved changes made to the images are lost.

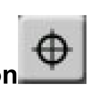
1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Make the necessary image manipulations to the exam images.
4. Click on the **Reset Image to Last Saved**

 tool in the Tools palette to restore the original image.

10.13. Multiplanar Localization

The **Multiplanar Localization** tool allows you to identify a point across cross referenced image series (typically CT or MR exams). Once a point has been selected in one image series, the image in the other series which intersects (or is closes to intersecting) the selected point in the "patient coordinate space" is displayed. In addition to displaying the complementary image, the selected point is displayed on the image.

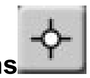
Note: **You must cross reference the two image series in order to use this tool. The images must also be displayed in Stack mode.**

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Display the two image series for which you wish to create a multiplanar localization.
3. Display both image series in **Stack** mode by selecting **Stack** from the **Change Image Format** drop-down menu in the exam's title bar of each series.
4. Cross reference the two image series.
5. Open the Tools palette.
6. Select the **Multiplanar Localization** tool from the Tools palette.
7. Position the mouse cursor over an image in one of the image series.
8. Click on the left mouse button.

A localizing mark appears on the image. If an image in the other image series intersects the selected point, that image is displayed automatically. A similar localizing mark appears on the second image to identify the selected point's location.

10.14. Pixel Lens

To display the pixel values and coordinate information for individual pixels of an image, use the **Pixel Lens** tool. After selecting this tool, place the mouse cursor over any displayed image. The pixel and X / Y coordinate values are displayed at the top of the image. These values are updated automatically as you move the mouse pointer around the image.

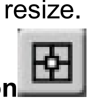
1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Pixel Lens**  tool from the Tools palette.
4. Place the mouse cursor over a displayed image. You do not need to click the mouse button.

   The pixel values and X / Y coordinates are displayed in top if the image.
5. Move the mouse cursor to a new location on the image.

   The pixel values and the X / Y coordinates are updated automatically.

10.15. Fit to Display Region

The **Fit to Display Region** tool allows you to enlarge or reduce an image so that the entire image fits within the image display region.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Selection**  tool from the Tools palette.
4. Select the image(s) you wish to resize.
5. Select the **Fit to Display Region**  tool from the Tools palette.

   The selected image(s) is resized so that it completely occupies its display region. The image may be enlarged or reduced - whichever results in the image occupying as much space as possible within the region while still being fully visible.

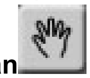
10.16. Pan Images

When you zoom or magnify images in their display regions, they may become larger than the display region. Panning allows you to move the image in the display region so that you may still view all portions of the images.

When panning a selected image, the changes automatically propagate to all selected images. The **Pan** tool may also be applied to non-selected images. In this case, the changes only apply to the image being manipulated.

Note: If you hold down the Alt key while using this tool, the function changes to the Window/Level tool.

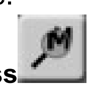
Note: When applying the Shift or Shift-Ctrl modifiers, the Pan tool can also be used to Zoom the selected images.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Pan** tool from the Tools palette.
4. Place the mouse cursor over the image to pan and press the left mouse button.
5. While holding down the mouse button, drag the mouse in the direction you want to move the image.
6. Release the mouse button when you have moved the image to the desired location.

10.17. Magic Glass

Apart from zooming in and out, you can also use the **Magic Glass** tool to look at small details on an image.

The **Magic Glass** tool created a small windowed region that is superimposed over an image. Using this tool allows you to quickly magnify, adjust window/level, or invert the gray scale of a smaller area of an image. By default, the magnification ratio of the windowed region is 2x. The default size of the windowed region is 20% of the image size. These defaults can be modified in the Utilities tab.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Magic Glass** tool from the Tools palette.
4. Place the mouse cursor over the image you wish to view and click the left mouse button.

   A rectangle with a white border is displayed over the image. This is the Magic Glass region. The magnified region remains visible as long as the mouse button is pressed.
5. Move the Magic Glass region around the image to magnify different areas of the image.

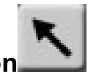
Note: To resize the Magic Glass region, hold down the Ctrl key after clicking the left mouse button, and drag the mouse to the desired size.

6. To change the Window/Level settings within the Magic Class region, hold down the **Alt** key while pressing the left mouse button.

   For instructions on changing the Window/Level values, refer to Window/Level Decision Path.
7. To change the magnification ration within the Magic Glass region, hold down the **Shift** key while pressing the left mouse button.

   The movements you make with the mouse button are the same as when you are using the Continuous Zoom tool.
8. To invert the gray scale of an image, hold down the **Ctrl** and **Alt** keys before pressing the left mouse button. Release the **Ctrl** and **Alt** keys, but continue to hold down the left mouse button.

As you move the Magic Glass region around, the image within the display region shows the inverted gray scale.

9. To turn off the Magic Glass, select the **Selection** tool or another state tool from the Tools palette.

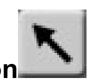
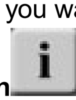
   None of the image manipulations (i.e., magnify, window/level, invert) that may have occurred within the **Magic Glass** are saved.

10.18. Image Information

You can display information about a selected image at any time by clicking on the **Image Information** tool.

The **Image Information** tool presents a window containing image header information for any selected images within the active image series. Multiple image information windows can be displayed at once.

Note: The image information displayed in the Image Information window may differ from the overlay information for an image.

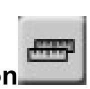
1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Selection** tool from the Tools palette.
4. Select the image(s) for which you want to display information.
5. Select the **Image Information** tool from the Tools palette.

   The Image Information window is displayed. The Image Information window contains three buttons. The first button, labeled **Print**, prints the information to the Workstations's assigned printer. The button labeled **Close**, closes the current information windows. The third button, labeled **Close All**, closes all open information windows.

10.19. Measure Calibration

You can create a measurement calibration frame of reference for your image with the **Measure Calibration** tool. When you draw a line with the tool, the system prompts you to enter a measurement baseline. This baseline is then shown on the image and the other measurements on the image are adjusted to this baseline.

For example, if you draw a calibration line on the image and enter a baseline of 100mm, the calibration line will reflect its size in relation to the 100mm baseline.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Measure Calibration** tool from the Tools palette.
4. Click your mouse where you want to place the beginning of the calibration line.

5. Hold down the mouse button and drag the draw the calibration line.
6. Release the mouse button where you want the end of the calibration line.
7. When the Provide the Pixel Spacing Value window appears, enter a value in the left field and select an increment value from the pull-down menu on the right and click on **OK**.

   The measurement calibration, in relation to the line drawn, is shown at the bottom of the image.

10.20. View Cines

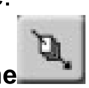
10.20.1. Cines Overview

Cinematic (cine) functionality lets you easily browse through the images within an image series. When you page through quickly, the results look like a movie, thus the term “cine.” The cine display can be controlled manually by using the **Manual Cine** tool and also with a set of cine controls. The cine controls are only available if the image is displayed in a Stack mode.

10.20.2. Manually Cine

The **Manual Cine** tool may be used whether the images are displayed in Stack or Sheet mode, and uses mouse movements to control the display of the images.

In the Utilities palette, you can choose between optimized navigation or optimized diagnostic image quality. For faster scrolling, select **Image Navigation**. If you want high quality images and are not concerned with the scrolling speed, select **Diagnostic Image Quality**.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Manual Cine**  tool from the Tools palette.
4. Position the mouse cursor over an image.
5. Click and hold the left mouse button.

   To decrease the image number (move toward top of stack), drag the mouse up, towards the top of the screen.

   To increase the image number (move toward bottom of stack), drag the mouse down, towards the bottom of the screen.

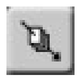
   While viewing cines manually, you can enable **Fast Scroll** by holding down the **Shift** key as you move the mouse. Fast Scroll allows for easier scrolling through large series by scrolling through a configurable percentage of the images (the default is 5%).

6. Release the mouse button when you are finished.

   If the images are displayed in Sheet mode, the remaining images in the image series are repainted so that the image order is maintained.

10.20.3. View Significant Images in Cine

You can also display only your marked significant images in cine mode in the Image View Area.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Move the mouse cursor to the top of the screen to display the **Function Bar**.
4. Select **View Sig Images** from the **Exam Functions** drop-down menu to display only the significant images.
5. Select the **Manual Cin**e  tool from the Tools palette.
6. Position the mouse cursor over an image.
7. Click and hold the left mouse button.

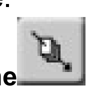
   To decrease the image number (move toward top of the stack), drag the mouse up, towards the top of the stack.

   To increase the image number (move toward bottom of the stack), drag the mouse down, towards the bottom of the stack.

   While viewing cines manually, you can enable **Fast Scroll** by holding down the **Shift** key as you move the mouse. Fast Scroll allows for easier scrolling through large series by scrolling through a configurable percentage of the images (the default is 5%).
8. Release the mouse button when you are finished.

10.20.4. Mark Significant Images in Manual Cine Mode

You can mark images as significant images while in the manual cine mode.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Manual Cine** tool from the Tools palette.
4. Position the mouse cursor over an image.
5. Press the **Space bar**.

   If the image where your mouse cursor is located is not a significant image, the significant image marker is inserted. If the image where your mouse cursor is located is a significant image, the significant image marker is removed.

10.20.5. View Cines Automatically

When an image series is in Stack mode, the title bar of the image series displays the **Show/Hide** toggle button on the left side. The **Show/Hide** button displays the Cine Control palette at the top of the stacked image series. When the Cine Control palette is displayed, the button changes to **Show**. Selecting the **Hide** button removes the Cine Control palette and the **Hide** button reads **Show** again.

Note: To place an image series in the Stack Mode, click on the Change Image Format drop-down menu in the image series' title bar and select Stack.

10.21. Cine Controls

Start Playback plays the image series stack forward, showing the current image followed by the next image and so on, at the specified frame rate.

Start Reverse Playback plays the image series stack backwards, showing the current image followed by the previous image and so on, at the specified frame rate.

Stop Playback stops the playback of the image series stack.

Adjust Frame Rate allows you to change the frame display rate. To adjust the rate, click and drag the slider control to the desired speed. Dragging towards the plus sign (+) increases the speed. Dragging towards the minus sing (-) decreases the speed.

Previous Image displays the previous image in a single-frame advance, based on the current looping method.

Next Image displays the next image in a single-frame advance, based on the current looping method.

Image Range displays two text boxes in which you specify the beginning and end of a range of images to be viewed. By default, the values are set at the first image in the stack and the last image in the stack. To set the range, click the left box and enter the starting value. Changing the image range does not change the looping method.

10.22. Looping

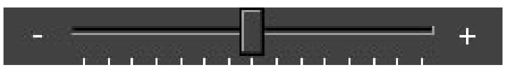
Looping methods define the way that the images are displayed during the cine playback. The two available looping methods are Cyclic and Pendulum.

Cyclic looping results in the stack being played in only one direction. For example, after selecting the **Start Playback** button, the images proceed from the top of the stack to the bottom (direction of increasing image numbers). when the bottom is reached, the playback begins again at the top of the stack and proceeds to the bottom again. This continues until the playback is stopped.

Pendulum looping results in the stack being played forward, and then backwards, once the end of the stack is reached. When the beginning of the stack is reached again, then the stack is played forwards, The starting playback direction is determined by whether the user selects the **Start Playback** button or the **Start Reverse Playback** button. This playback continues until the playback is stopped.

10.23. Use Cine Controls

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Select **Stack** from the **Change Image Format** drop-down menu in the exam's title bar, if you are not already in the **Stack** mode.
3. Click on the **Show** button in the exam's title bar to display the cine controls.
4. Select a looping method by clicking on either the **Cyclic** or **Pendulum** button in the Cine Control panel.
5. Click on the **Start Playback** button to begin viewing the images.
6. Click and drag the **Adjust Frame Rate** slider to adjust the speed of the images.

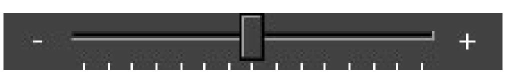


7. Click on the **Stop Playback** button when you are done.

10.24. View Significant Images in Automatic or Cine Mode

You can display only your marked significant images in cine mode in the Image View Area.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Move the mouse cursor to the top of the screen to display the **Function Bar**.
3. Click on the **Exam Functions** drop-down menu and select **View SIG Images**.
4. Select **Stack** from the **Change Image Format** drop-down menu in the exam's title bar, if you are not already in the **Stack** mode.
5. Click on the **Show** button in the exam's title bar to display the cine controls.
6. Select a looping method by clicking on either the **Cyclic** or **Pendulum** button in the cine control panel.
7. Click on the **Start Playback** button to begin viewing the images.
8. Click and drag the **Adjust Frame Rate** slider to adjust the speed of the images.



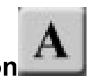
9. Click on the **Stop Playback** button when you are done.

10.25. Annotations

10.25.1. Place a Text Annotation

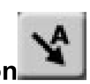
The **Text Annotation** tool is used to add text annotations to any displayed image. The annotation is contained in a text box that you draw on the image. If an annotated image appears on other image display areas, the annotation appears on all instances of the image.

Note: To automatically mark an image as significant, select Mark as SIGnificant When Annotation is Created in the user preferences. Then, whenever you annotate an image, it is marked as significant.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Text Annotation** tool from the Tools palette.
4. On the image you wish to annotate, click and drag with the mouse pointer to draw a box to hold your annotation.
5. Release the mouse button when you finished drawing the box.
6. Click inside the text box and begin typing in the text annotation.
7. Click outside the text box to end the annotation.

10.25.2. Place an Arrow Annotation

The **Arrow Annotation** tool allows you to draw arrows on displayed images. These highly visible pointers are useful for pointing out areas of interest or for associating a text annotation with a specific portion of an image.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Arrow Annotation** tool from the Tools palette.
4. On the image you wish to annotate, click the mouse button where you wish to start the arrow annotation.
5. Hold down the mouse button and drag to draw the arrow.
6. Release the mouse button to end the line and finish the arrow.

10.25.3. Resize a Text Box or Arrow Annotation

You may change the shape of a text box or arrow at any time by using the following procedure.

1. From either the Work Modes or Patient Jacket palette, open an exam with annotations.
2. Open the Tools palette.
3. Select the **Selection** tool from the Tools palette.
4. Click on the text box or arrow you wish to resize.
5. Resizing handles (squares) appear at each corner of the text box or the ends of the

arrow.

6. Click on a handle with the mouse button and click and drag to resize the text box or arrow.
7. Click outside the text box or arrow to end the resizing operation.

10.25.4. Show/Hide Annotations

You can toggle the annotation displays on or off from the **Image Functions** drop-down menu. You can also use the **Alt - Y** shortcut key combination to toggle the display.

1. From either the Work Modes or Patient Jacket palette, open an exam with annotations.
2. Move the mouse cursor to the top of the screen to display the **Function Bar**.
3. Click on the **Image Functions** drop-down menu and select **ROI/Annotation**.

   The annotations and arrows are hidden.
4. Click on the **ROI/Annotation** button on the **Image Functions** drop-down menu in the **Function Bar** to display the annotations.

10.25.5. Move Annotations

Annotations can be moved anywhere on the image they are attached to. Annotations cannot be moved from one image to another.

Annotations cannot be moved beyond the periphery of the actual image. Even if the layout of the images leaves a great amount of space around an image, the annotation cannot extend outside the actual image space.

1. From either the Work Modes or Patient Jacket palette, open an exam with annotations.
2. Open the Tools palette.
3. Select the **Selection**  tool from the Tools palette.
4. Click on the annotation you wish to move.
5. While holding down the mouse button, drag the annotation to a new location.

10.25.6. Remove Annotations

You may remove annotations from an image by using the following procedure:

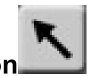
1. From either the Work Modes or Patient Jacket palette, open an exam with annotations.
2. Open the Tools palette.
3. Select the **Selection**  tool from the Tools palette.
4. Click on the annotation you wish to remove.
5. Press the **Delete** key.

   The annotation is removed from the image (and also from any duplicates of the image in other Image Display Areas.

10.25.7. Change Annotation Font

The font (typeface) used to display annotations can be changes using the **Change Annotation Font** selection from the **Image Functions** drop-down menu in the **Functions Bar**. You may change the annotation fonts at any time.

Note: You may globally change the font used for annotations by changing it in the Utilities palette. Changing the font in the Utilities palette does not effect existing annotations, only those created afterwards.

1. From either the Work Modes or Patient Jacket palette, open an exam with annotations.
2. Open the Tools palette.
3. Select the **Selection** tool from the Tools palette.
4. Click on the annotation you wish to change the font for.

   To select more than one text box, hold down the **Ctrl** key while making the additional selections.
5. Move the mouse cursor to the top of the screen to display the **Function Bar**.
6. Click on the **Image Functions** drop-down menu and select **Change Annotation Font**.

   The Change Annotation Font dialog is displayed.
7. Select the new font, type, and size from the drop-down menus.
8. Click on **OK**.

   The annotations you selected are updated to reflect the new settings.

10.26. Regions of Interest (ROI)

10.26.1. Regions of Interest Overview

The Region of Interest (ROI) and measurement tools allow you to draw oval, polygons, and rectangles on a displayed image for the purpose of making annotations, measurements and viewing statistical information.

Caution: Measurement accuracy is not guaranteed since measurements are based upon data supplied by the modality which acquired the image. Measurement accuracy for CR images is not guaranteed due to possible variations in patient positioning relative to the acquisition plate.

Each measure line, angle, and ROI has a unique numeric identifier and data annotation. This identifier is displayed immediately above and next to the line or ROI, as well as next to the data annotation. For angular measurements, the identifier is located within the measured angle. The identifiers are unique to only the image. Moving the image with an associated identifier results in moving the identifier along with the image. The annotations are displayed in the lower-right corner of the Image Display Region Area. The maximum number of annotations that can appear at one time is five. If five annotations are currently displayed, the oldest displayed annotation is removed to display the new annotations. In the event that an annotation for a displayed image is not listed, selecting the ROI or measurement results in displaying the original identifier at the top of the annotation list. The annotation on the bottom of the list is removed to make room for the original annotation.

An ROI annotation is automatically created along with the defined region. ROI data is labeled in the following manner:

A zzz.z mm^2	The area of the enclosed region in square pixels. If the acquiring modality has recorded the image's pixel size, this value is displayed in square millimeters.
Max mmm.m	The maximum pixel value within the ROI in modality units.
Min mmm.m	The minimum pixel value within the ROI in modality units.
X mmm.m	The mean value of the enclosed region in modality units.
SD nnn.n	The standard deviation in modality units.

The statistical results should be displayed in the scientific notation, using the following format:

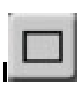
#[.][#][#][#][E][%]

Where:

[.]	Indicates optional (Backus Naur Form)
#	Indicates a number between 0 and 9
%	Indicates a number between 1 and 9

10.26.2. Rectangle ROI

By clicking on the **Rectangle ROI** tool, you can create rectangular or square ROIs on an image. The ROI can be resized and moved by dragging the edges or corners of the rectangle or square with the mouse.

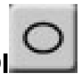
1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Rectangle ROI** tool from the Tools palette.
4. Place the mouse cursor over the image of interest and press the left mouse button.
5. Keep the mouse button pressed and drag the mouse to draw a rectangle over the image.

   Press the **Shift** key while dragging the mouse to constrain the shape to a square.
6. Release the mouse button to complete the rectangle.

   Once the ROI is complete, an annotation is automatically created in the lower-right corner of the Image Display Region Area. A number preceding the annotation corresponds to the number located near the ROI.

10.26.3. Oval ROI

By clicking on the **Oval ROI** tool, you can create oval and circle ROIs on an image. The ROI can be resized or moved by dragging the edges or corners of the oval or circle with the mouse.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Oval ROI** tool from the Tools palette.
4. Place the mouse cursor over the image of interest and press the left mouse button.
5. Keep the mouse button pressed and drag the mouse to draw an oval over the image.

   Press the **Shift** key while dragging the mouse to constrain the shape to a circle.
6. Release the mouse button to complete the oval.

   Once the ROI is complete, an annotation is automatically created in the lower-right corner of the Image Display Region Area. A number preceding the annotation corresponds to the number located near the ROI.

10.26.4. Polygon ROI

By clicking in the **Polygon ROI** tool, you can create a polygon ROI on an image. It can be moved by dragging the edge with the mouse. A polygon is defined as more than two points. Therefore, to ensure reliable statistics, a polygon ROI should consist of at least three non-linear points.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Polygon ROI** tool from the Tools palette.
4. Place the mouse cursor over the image of interest and click the left mouse button once.

   This sets the first point of the polygon.
5. Move the mouse cursor to the next point of the polygon.

   As you move the mouse, a line is drawn extending out from the first point.

   To ensure reliable statistics, while drawing the polygon ROI, do not cross back over other lines of the same polygon.
6. Click the left mouse button once at the next defining point of the ROI.
7. After setting the second point, move the mouse cursor to the next point and click the left mouse button once again to set the point.

   A line follows the mouse cursor from the last set point to the new point. Setting the new point establishes that line as part of the ROI.
8. Continue in this fashion until you reach the last point that defines the polygon ROI.
9. Double-click the left mouse button to establish the last point that defines the polygon ROI and to close the polygon.

   Once the ROI is complete, an annotation is automatically created in the lower-right corner of the Image Display Region Area. A number preceding the annotation corresponds to the number located near the ROI.

10.26.5. Show/Hide ROIs

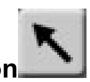
Use the **ROI/Annotation** function from the **Image Function** drop-down menu to toggle on and off the display of the ROIs. You can also press the **Alt - Y** shortcut keys to toggle the ROI/Annotation display.

1. From either the Work Modes or Patient Jacket palette, open an exam with ROIs.
2. Open the Tools palette.
3. Move the mouse cursor to the top of the screen to display the **Function Bar**.
4. Click on the **Image Function** drop-down menu and select **ROI/Annotation**.

   The ROIs and annotations are hidden.
5. Click on the **ROI/Annotation** button on the **Image Functions** drop-down menu in the **Function Bar** to display the ROIs and annotations.

10.26.6. Reposition an ROI

ROIs can be moved anywhere on the image they are attached to. ROIs cannot be moved from one image to another.

1. From either the Work Modes or Patient Jacket palette, open an exam with ROIs.
2. Open the Tools palette.
3. Select the **Selection** tool from the Tools palette.
4. Click and hold the mouse button on the edge of the ROI.
5. Drag the ROI to its new position.

   After the ROI has been moved, its associated annotations are updated automatically to reflect the new statistics of the region.

10.26.7. Resize a ROI

You may change the size of the ROI area at any time by using the following procedure. A polygon's ROI can not be resized.

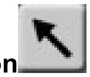
1. From either the Work Modes or Patient Jacket palette, open an exam with ROIs.
2. Open the Tools palette.
3. Select the **Selection** tool from the Tools palette.
4. Click on the ROI you wish to resize.
5. Click and hold the mouse button over one the handles (boxes) along the edge of the ROI and drag the handle to resize it.

   After the ROI has been resized, its associated annotations are updated automatically to reflect the new statistics of the region.

10.26.8. Delete ROI

You may remove ROIs from an image by using the following procedure.

1. From either the Work Modes or Patient Jacket palette, open an exam with ROIs.
2. Open the Tools palette.

3. Select the **Selection** tool from the Tools palette.
4. Click on the ROI you wish to delete.
5. Press the **Delete** key.

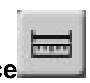
   Deleting the ROI automatically deletes its associated annotations.

10.27. Measurements

10.27.1. Measure Distance

The function of the **Measure Distance** tool is to measure the distance between two selected points. The measurement data consists of the length of the measurement line in pixels. If the modality unit that acquired the image has recorded the image's pixel size, this value is displayed in millimeters. If you draw multiple lines with the Measure Distance tool, a Cobb angle measurement associated with the last two drawn lines is automatically displayed. These lines do not have to intersect within the image frame.

Note: Multiple distance lines may be present on an image. Measurement lines do not share common end points. In instances where it may appear as if they do, common endpoints are the distinct endpoints of each line layered on top of one another.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Measure Distance** tool from the Tools palette.
4. Place the mouse over the area of interest and press the left mouse button.

   This anchors the first endpoint of the distance line.
5. While keeping the mouse button pressed, drag the line away from the anchor point.
6. Release the mouse button when the line is the proper length and orientation.

   This anchors the second endpoint of the distance line.

   Once the endpoint is established, an annotation is automatically created. This annotation is displayed in the image display region. A number next to the annotation corresponds to the number which labels the measure line.

10.27.2. Cobb Angles

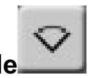
If an acute angle is created when drawing measurement lines, a Cobb angle notation for the last two selected lines is made. The notation will show the degree of the Cobb angle, as well as the measurement lines that created the Cobb angle. The Cobb angle information will not appear if more than two lines are selected at a time. The angle measurement information, notes as a Cobb angle, is shown in the same area on the screen as the line distance measurements.

Highlight a Cobb Angle With an ROI

You can create a region of interest (ROI) to highlight a Cobb angle. If one region of interest is created, the Cobb angle notations, measurement notations, and ROI notations are all shown on the image. If more than one region of interest is created, only the Cobb angle and ROI notations are shown on the image.

10.27.3. Measure Angle

The **Measure Angle** tool is used to make angular measurements directly on an image. This is done by outlining the angle you wish to measure by using this tool. The angular measurement is presented as an annotation on the overlay data region in the lower-right corner of the image. Multiple angle measurements can be drawn on an image.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Measure Angle** tool from the Tools palette.
4. Click once on the image to mark the beginning of the first leg of the angle.
5. Move the mouse pointer to the vertex of the angle you wish to measure and click the mouse button once again.
6. Move the mouse pointer to the last segment of the angle and click once when finished.

   A unique numeric identifier appears near the vertex of the completed angle. A data annotation, labeled with this ID and showing the value for the angle, appears in the lower-right corner of the image display area.

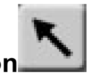
10.27.4. Reposition a Measurement

A measurement may be repositioned on an image at any time.

1. From either the Work Modes or Patient Jacket palette, open an exam with measurements.
2. Open the Tools palette.
3. Select the **Selection** tool from the Tools palette.
4. Click on the measurement to select it.
5. While holding down the left mouse button, drag the measurement to its new position.

10.27.5. Resize a Measurement

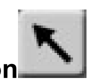
A measurement may be resized on am image by clicking and dragging one of the line handles.

1. From either the Work Modes or Patient Jacket palette, open an exam with measurements.
2. Open the Tools palette.
3. Select the **Selection** tool from the Tools palette.
4. Click on the measurement to select it.
5. Select one of the handles over the endpoints.
6. While holding down the left mouse button, drag the measurement to the new size.

   After the measurement has been resized, its associated annotations are updated automatically.

10.27.6. Delete a Measurement

The measurement may be deleted on an image at any time.

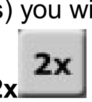
1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Selection** tool from the Tools palette.
4. Click on the measurement to select it.
5. Press the **Delete** key to delete the measurement.

   Deleting the measurement automatically deletes its associated annotations.

10.28. Zooming

10.28.1. Zoom 2x

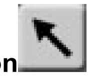
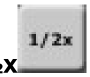
The **Zoom 2x** tool magnifies the selected images to twice their current size. The upper limit of this feature is eight times the original size. The center of the image’s display area servers as the focal point for the magnification.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Selection** tool from the Tools palette.
4. Select the image(s) you wish to magnify with the **Selection** tool.
5. Select the **Zoom 2x**

 tool from the Tools palette to magnify the selected image(s).
6. Select the **Zoom 2x** tool again to magnify the image(s) further.

10.28.2. Zoom 1/2x

The **Zoom ½x** tool reduces the selected image(s) to half the current size. The limit of this feature is 1/8 of the original size. The center of the image's display area serves as the focal point for the reduction.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Selection** tool from the Tools palette.
4. Select the image(s) you wish to reduce.
5. Select the **Zoom ½x**

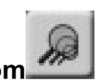
tool to reduce the selected image(s).
6. Select the **Zoom ½x** tool again to reduce the image(s) further.

10.28.3. Continuous Zoom

The **Continuous Zoom** tool lets you increase or reduce the magnification of an image. You can use the **Continuous Zoom** tool to "zero in" on specific areas or parts of an image or "pull back" for an overall view.

When zooming a selected image, the changes automatically propagate to all selected images. The **Continuous Zoom** tool may also be applied to non-selected images. In this case, the changes only apply to the images being manipulated.

Note: When applying a modifier, the Continuous Zoom tool can also be used to Pan the selected images.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Continuous Zoom** tool from the Tools palette.
4. Place the mouse cursor over a selected image and press the left mouse button.
5. While holding down the mouse button, drag the mouse towards the top of the screen to increase the size of the image. To reduce the size of the image after zooming it, hold down the mouse button and drag the mouse towards the bottom of the screen.
6. Release the mouse button to stop zooming.

10.28.4. Last Zoom Exact Value

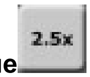
The **Last Zoom Exact Value** tool is configured by the last magnification value used in the Select Zoom Factor window. Selecting this tool magnifies the selected image(s) according to that value.

The intent of this tool is to allow you to quickly reduce or increase the magnification of images using a value that you have specified. You do not need to continually use the Select Zoom Factor window to repeatedly apply the same magnification.

Note: Using the Zoom 2x and Zoom ½x tools does not update the Last Zoom Exact Value tool. In addition, this tool zooms only the exact magnification indicated (i.e., if the button says "2x," clicking it twice for

the same image will not zoom to 4x.

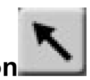
10.29. Set the Last Zoom Exact Value

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Right-click on the **Last Zoom Exact Value** 

 tool in the Tools palette.

   The Please Select Zoom Factor window is displayed with a drop-down list of the last five magnification values used.
4. Select a magnification value from the list or enter a magnification value into the field.
5. Click on **OK**.

10.30. Magnify Images with the Last Zoom Exact Value Tool

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Selection**  tool from the Tools palette.
4. Select the image(s) you wish to magnify with the **Selection** tool.
5. Select the **Last Zoom Exact Value** 

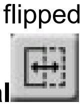
 tool on the Tools palette.

   The selected image(s) is magnified.

10.31. Rotate Images

10.31.1. Flip Horizontal

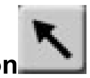
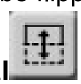
The function of the **Flip Horizontal** tool is to display the selected image(s) flipped horizontally. The original orientation of the images is usually identified as an image annotation and remains visible even when other image annotations are hidden.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Selection**  tool from the Tools palette.
4. Select the image(s) to be flipped.
5. Select the **Flip Horizontal**  tool from the Tools palette.

   The selected images are flipped horizontally automatically.

10.31.2. Flip Vertically

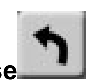
The **Flip Vertical** tool displays the selected image(s) flipped vertically. The original orientation of the image is usually identified as an image annotation and remains visible even when other image annotations are hidden.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Selection**  tool from the Tools palette.
4. Select the image(s) to be flipped.
5. Select the **Flip Vertical**  tool from the Tools palette.

   The selected images are flipped vertically automatically.

10.31.3. Rotate Counter Clockwise

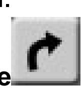
The **Rotate 90° Counter Clockwise** tool displays the selected image(s) rotated 90 degrees counter-clockwise. The original orientation of the image is usually identified as an image annotation and remains visible even when other image annotations are hidden.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Selection**  tool from the Tools palette.
4. Select the image(s) to be rotated.
5. Select the **Rotate 90° Counter Clockwise**  tool from the Tools palette.

   The selected images are rotated automatically.

10.31.4. Rotate Clockwise

The **Rotate 90° Clockwise** tool displays the selected image(s) rotated 90 degrees clockwise. The original orientation of the image is usually identified as an image annotation and remains visible even when other image annotations are hidden.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Selection**  tool from the Tools palette.
4. Select the image(s) to be rotated.
5. Select the **Rotate 90° Clockwise**  tool from the Tools palette.

   The selected images are rotated automatically.

Chapter 11. Image View Area

11.1. Image View Area Overview

When an exam is opened from the Work Modes or Patient Jacket palettes, the images are displayed in the **Image View Area display area**. The patient name, patient ID, and exam date and time are displayed in the title bar.

The selected exam's images are displayed in the **Image Series Display Areas**.

To make moving around image series more efficient, a group of **Navigation Buttons** are displayed to the right of the image's title bar. You can also select other series and comparison studies from here.

When viewing an exam, you can change the Image Series Display Area configuration at any time by clicking on the **Change Image Format** drop-down menu and selecting a new layout.

11.2. Navigating in Exams

11.2.1. Navigating Through Images

The **Image View Area** opens automatically and displays the patient exams you selected from the Work Modes or Patient Jacket palette. The images from an exam may be broken down into a number of image series. The image series for an exam are displayed in the **Series** hot-zone button in the exam's title bar.

To make navigating through an image series more efficient, a set of navigation buttons appear to the right of the exam's title bar. Click on these buttons to advance you forward or backwards through the series.

Previous Page of Images 

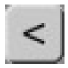
Click on the **Previous Page of Images** button to display the previous page of the series. You can also press the **Page Up** key to display the previous page of the series with focus.

For example, if the current page displays images 10-18, clicking on the **Previous Page of Images** button displays images 1-9.

Next Page of Images 

Click on the **Next Page of Images** button to display the next page of the series. You can also press the **Page Down** key to display the next page of the series with focus.

For example, if the current page displays images 1-9, clicking on the **Next Page of Images** displays images 10-18.

Previous Image 

When you click on the **Previous Image** button, each of the displayed images in the series moves over one space to the right. You can also press the **left arrow** key on the keyboard.

For example, if you click on the **Previous Image button,** the space occupied by image # 4 is replaced by image # 3.

Next Image 

When you click on the **Next Page** button, each of the displayed images in the series moves over one space to the left. You can also press the **right arrow** key on the keyboard.

For example, if you click on the **Next Image** button, the space occupied by image # 1 is replaced by image # 2.

Home / End Keys

You can use the **Home** and **End** keys to move quickly from one end of a series or worklist to another. When you press the **Home** key, you are moved to the beginning of an exam series or worklist. If the series is displayed in Sheet mode, the first image is displayed in the top and left mouse space of the region, depending on the image format. If the series is displayed in Stack mode, the first image is displayed at the top of the stack.

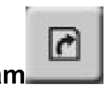
When you press the **End** key, you are moved to the end of an exam series or worklist. If the series is displayed in Sheet mode, the last image is displayed in the bottom and right most space of the region, depending on the image format. If the series is displayed in Stack mode, the last image is displayed at the top of the stack.

If a series of images is not displayed in the region, and you select either the **Home** or **End** keys, a dialog message appears indicating that the selected display region does not contain a series of images. Either load a series of images in the selected region or select a different region.

11.2.2. View Next Patient Exam

When you are reviewing multiple patient exams that are in the same worklist, you can open the next exam without leaving the Image View Area.

After you are done reviewing the current exam and wish to open the next exam in the worklist:

1. From either the Work Modes or Patient Jacket palette, select the exams with the images you wish to view.
2. Move the mouse cursor to the top of the Centricity™ Workstation screen to display the **Function Bar**.
3. Click on the **Next Exam**  icon in the upper-right corner.

   This closes the current exam and opens the next exam in the worklist.

11.2.3. Selecting a Series

If you place your cursor on top of the **Series** hot zone without clicking, a series list for the current exam is displayed. The current series is shown with a bold check mark. Series in other regions of the monitor(s) are shown with a light colored check mark. To select a series from the Series list, move the cursor over the series you wish to view and click. You can also click on **Next Series** to move to the next available series in the list. The selected series is displayed in the current display region.

1. From either the Work Modes or Patient Jacket palette, select the exams with the images you wish to view.
2. Place your mouse cursor over the **Series** hot zone button in the Image Series Display Area's title bar.

   A list of image series for the current exam is displayed.
3. Select the image series wish to view.

   The currently displayed image series is closed and the selected image series is displayed in the Image Series Display Area.

11.2.4. Open a Comparison Exam

If you place your mouse pointer on top of the **Comp** hot zone without clicking, a list if comparison exams for the exam you are viewing is displayed. Comparison exams displayed within the selected display region are shown with a bold check mark. Comparison exams that are displayed in other regions of the monitor(s) are shown with a light colored check mark.

To select a comparison from the **Comp** hot zone, move the mouse cursor over the comparison you wish to view and click, or click on **Next Comparison Series** to move to the next available comparison exam in the list. The first series of the selected comparison exam is displayed in the selected display region. The **Comp** hot zone can display a maximum of 20 exams. To see a listing of all exams, click on **Patient Exam List** to display the Patient Jacket palette which lists all the exams for the patient.

1. From either the Work Modes or Patient Jacket palette, select the exams with the images

you wish to view. Be sure to select the **Include Comparisons** check box.

2. Place your mouse cursor over the **Comp** hot zone button in the Image Series Display Area's title bar.

   A list of related comparison exams is displayed.

3. Select the comparison exam you wish to view.

   The currently displayed exam is closed and the selected comparison is displayed in the Image Series Display Area.

11.2.5. List of Opened Exams

If you select to open multiple exams from the Work Modes and Patient Jacket palette, the first selected exam is displayed and the additional exams are listed under the Opened Exams hot zone button in the Image View Area. The exams are listed in the order that they were selected.

1. From either the Work Modes or Patient Jacket palette, select the exams with the images you wish to view.
2. Move the mouse cursor to the top of the screen to display the **Function Bar**.
3. Place your mouse cursor over the **Opened Exams** hot zone button in the **Function Bar**.

   A list of opened exams is displayed.

4. Select the exam you wish to view next.

   The currently displayed exam is closed and the selected exam is displayed in the Image View Area.

11.3. View Images

11.3.1. Toggle an Image's Size

Many times, images are displayed in formats other than 1:1 to maximize the display capacity of available monitors. This default display size may not be desirable for diagnostic or review purposes.

Double-clicking on an image toggles the image from n:1, to full size (1:1), and back again.

Note: Double-clicking does not have this effect when using the Region of Interest (ROI) or Annotation tools.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Double-click on an image to enlarge the image.
3. Double-click on the image again to return to the default size.

11.3.2. Image Overlay Data

Image Overlay Data Overview

Image Overlay Data consists of information about the image that is displayed in the image display region. Image overlay data includes information created during the image acquisition and is displayed around the perimeter of the image display regions.

Image overlay is subject to restrictions due to monitor resolution. The image format must be low enough to allow the display of the overlay data. If the data does not display, change the image format for the Image Series Display Area so that fewer images are displayed.

Fixed Set of Image Overlay Data

Two sets of image overlay data are available and may be presented on an image. The first, fixed set of data, is associated with image quality, size and orientation. This set is always visible in the image display region. The fixed set of image overlay information is the same regardless of the modality.

The fixed set of image overlay data is as follows:

Dicom series number (e.g., Se: 7). Dicom series numbers are appended with a letter if they are separated into multiple sub-series (e.g., Se: 3 or Se: 3a).

- Dicom image number (e.g., IM: 20).
- Window/Level settings of the image (e.g., W: 904 L: 344).
- Image orientation (e.g., PF).
- Scale (e.g., 5cm)
- Significant image indicator (only appears on images that have been marked with the Significant Selection tool, e.g., SI.)

Variable Set of Image Overlay Data

The second set of image overlay data is variable. The variable set consists of all the image overlay data describing various image acquisition parameters. This information may vary between modalities. You may specify whether the variable set is displayed by selecting **Image Overlay** from the **Image Functions** drop-down menu in the **Function Bar**.

Each modality has the following basic information in common:

- Patient Name
- Exam, series and image numbers
- Study date and time
- Frame information (number of frames and frame index)

When you display all of the overlay information, the data that displays varies by modality. The following table displays the image overlay data for each modality.

Note: **This image overlay information is visible when the image format is 6:1 or lower (assuming a 1:1 monitor format). For higher monitor formats, overlay information may only be visible with lower image formats, if at all.**

	CR	CT	DX	MG	MR	NM	PT	RF	US	XA
Patient Name	●	●	●	●	●	●	●	●	●	●
Exam Series and Image Numbers	●	●	●	●	●	●	●	●	●	●
Study Date and Time	●	●	●	●	●	●	●	●	●	
Frame information	●	●	●	●	●	●	●	●	●	
Acq Mat					●					
Acq Time	●	●	●		●	●		●		
Age	●	●	●		●	●		●		
AO									●	
Cine							●		●	
Color Table						●	●		●	
DOB	●	●	●		●	●		●		
EN					●					
Exp Time		●								
FOV					●					
Im Date	●	●	●		●	●		●		
Im Time	●	●	●		●			●		
Ker		●								
kvp	●	●	●			●				
L	●	●	●		●	●			●	
Latitude	●		●			●				
mA	●	●	●			●				
mAs	●		●			●				

MI									●
Pitch		●							
Rec Coil					●				
Req Dia					●				
Sensitivity	●		●			●		●	
Scan Op					●				
Sex	●	●	●		●	●		●	
Site Name	●	●	●		●	●		●	●
SL		●			●				
Slice Spacing					●		●		
ST		●			●				
TE					●				
Tilt		●							
TIS									●
TR					●				
W	●	●	●		●	●			●
ZF Time	●	●	●		●	●		●	

11.4. Display Overlay Graphics

If the overlay information was saved as a graphic file when the exam was acquired, select **Overlay Graphics** from the **Image Functions** drop-down menu to show/hide the overlay. Selecting this option toggles on and off the display of overlay graphics for the displayed images.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Move the mouse cursor to the top of the screen to display the **Function Bar**.
3. Click on the **Image Functions** drop-down menu and select **Overlay Graphics**.

   The image's overlay graphics are displayed in the image area.
4. To turn off the overlay graphics, click on the **Image Functions** drop-down menu in the **Function Bar** and select **Overlay Graphics**.

   The overlay graphics are removed from the images.

11.4.1. View Exam as Acquired

Select the **Show Exam As Acquired** option from the **Exam Functions** drop-down menu to remove all post-acquisition image manipulations from the displayed images. In other words, this removes any modifications performed on the image since they were first acquired. This is useful when you want to see the images the way they looked before other uses manipulated them.

If you save an exam after selecting the **Show Exam as Acquired** option, all image manipulations are lost.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Move the mouse cursor to the top of the screen to display the **Function Bar**.
3. Click on the **Exam Functions** drop-down menu and select **Show Exam as Acquired**.

   The Show Exam as Acquired dialog appears and asks if you are sure you want to show the exam as acquired.
4. Click on **OK** to erase all manipulations.

11.4.2. View an Exam as Picture in Picture

Selecting the **Picture in Picture** option from the **Image Functions** drop-down menu displays a reduced version of the complete image in the upper-left corner of the display region. This is helpful when viewing highly magnified images. A white rectangle on the reduced version indicates which portion is currently being viewed. As an image is panned, the white rectangle will move on the reference image to indicate the location of the area being viewed.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Move the mouse cursor to the top of the screen to display the **Function Bar**.
3. Click on the **Image Functions** drop-down menu and select **Picture in Picture**.

   A small version of the complete image is shown in the upper-left corner of the display region. A white rectangle indicates which area on the image is currently being viewed.
4. Select the **Pan**  tool from the Tools palette.
5. Click on the original image (not the picture in picture image) with the **Pan** tool and drag to a new position.

   The white rectangle on the smaller image moves to show the new view.

11.4.3. Token Scouts

Select a Token Scout

You can cross reference a series with any other series, as long as their elements have intersecting planes. By default, the application selects the first image in the series to establish the cross reference. In cases where there is more than one image in the series being cross referenced and the layout is Sheet mode, you have the option to select a scout image to override the selection of the first image in the series.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Display the image that you want to use as a scout image.

3. Move the mouse cursor to the top of the screen to display the **Function Bar**.
4. Click on the **Image Functions** drop-down menu and select **Select a Scout**.
5. Immediately click on the displayed image to be the scout.

View Token Scouts

The **Token Scout** option in the **Image Functions** drop-down menu is only enabled when the cross referenced images are in Sheet mode and contain a scout. The **Token Scout** option allows you to view a miniature reference scout view in the bottom left corner of each slice image. The location of the slice is indicated on the token scout by a slice location line.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Click on the **Change Image Format** drop-down menu in the exam's title bar and select **Sheet** mode.
3. Move the mouse cursor to the top of the screen to display the **Function Bar**.
4. Click on the **Image Functions** drop-down menu in the **Function Bar** and select **Token Scout**.

   A miniature reference scout view is displayed in the bottom left corner of each image slice.
5. To turn off the Token Scout view, click on the **Token Scout** button in the **Image Functions** drop-down menu in the **Function Bar**.

11.4.4. Window/Level Presets

There are a number of preset window level settings that can be applied by using the keyboard or the **Image Functions** drop-down menu. Available presets are determined by the modality being viewed and user preference settings.

Holding the **Alt** key down while pressing a number key on the keyboard (0 through 9), applies a system defined preset. You can also select a key from the number keypad without holding down the **Alt** key. Numbers 1 through 6 are used to apply a modality specific preset. Numbers 7 through 0 are presets which may act on an exam from any modality.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Move the mouse cursor to the top of the screen to display the **Function Bar**.
3. Click on the **Image Functions** drop-down menu and select **Window Level Presets**.

   A sub-menu is displayed.
4. Select the Window/Level preset you wish to apply to the images.

11.4.5. View X-Ref Lines

When you are in the Stack mode, selecting **View X-Ref Lines** option from the **Image Functions** drop-down menu toggles on and off the display of the respective cross reference lines for each image. When the cross reference lines are displayed, this menu option appears in italics. This feature is only enabled when you are in the cross reference mode.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Cross reference the image series you wish to connect.
3. Click on the **Change Image Format** drop-down menu in a selected display regions' title bars and select **Stack** mode.
4. Move the mouse cursor to the top of the screen to display the **Function Bar**.

5. Click on the **Image Functions** drop-down menu and select **X-Ref Lines**.

   The cross reference lines for each image is displayed.
6. To turn off the display of the cross reference lines, click on the **X-Ref Line** button on the **Image Functions** drop-down menu in the **Function Bar**.

11.4.6. Print Images

You may print an exam's images from the Image View Area. You can print either the entire exam or individual images.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. In the Image View Area, select the images you wish to print.
3. Move the mouse cursor to the top of the screen to display the **Function Bar**.
4. Click on the **Exam Functions** drop-down menu and select **Print Images**.

   The Print Selection dialog box is displayed.
5. Check the **Print Film from Selected Exam** check box.
6. Click on the **Print** button.

   The Print Images dialog box is displayed.
7. Click on the **Camera** drop-down field and select the printer to print the exam.
8. Click on the **Format** drop-down menu and select the number of images (format) per sheet of film.

   The choices are 1, 2, 4, 6, 9, 12, 15, 16, 20, 35 images per sheet.
9. Enter how many copies of each film you want in the **Number of Copies** field (1 - 100 copies may be entered).
10. Select the radio button for the images you want to print.
11. Select a priority level.

    Standard gives no special priority to the print job.

    High priority assigns a higher priority to the print job. Only radiologists and technologists can select this option.
12. Click on the **Print** button.

11.4.7. Select Default Display Protocol

Apply A DDP to an Exam

When an exam is currently opened, the DDP for the exam is displayed in the **Display Functions** drop-down menu in the **Function Bar**.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Move the mouse cursor to the top of the screen to display the **Function Bar** and click on the **Display Functions** drop-down menu.
3. Select the DDP you wish to apply to the currently displayed images.

Apply Another User's DDP to an Exam

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Move the mouse cursor to the top of the screen to display the **Function Bar**.
3. Click on the **Display Functions** drop-down menu and select **More Display Protocols**.

   The More Display Protocols window is displayed.

Note: If you do not currently have any user DDPs or do not have any favorite DDPs selected, then this menu option will read Other Display Protocols.

4. Click on the **User for** drop-down field and select a user whose DDP you wish to apply.

   All the DDPs for the selected user are displayed in the list box.
5. Select the DDP you wish to apply.
6. Click on the **Apply** button.

11.5. Configure Monitor Layout

11.5.1. Stack and Sheet Mode

When selecting the number of images to display in an Image Series Display Area, you can select to view the images in sheet mode or stack mode.

Stack Mode

When you select the **Stack** option from the **Change Image Format** drop-down menu in the Image Series Display Area's title bar, the images are stacked on top of each other, only displaying one image at a time.

Sheet Mode

When you select the **Sheet** option from the **Change Image Format** drop-down menu in the Image Series Display Area's title bar, the images are displayed next to one another as if on a single sheet of paper. The following image series settings are used within the Workstation application:

1	one image
2H	two horizontally oriented images
2V	two vertically oriented images
4	four images
6	six images
9	nine images
12	twelve images
Custom	user-defined number of images

11.5.2. Change the Number of Images Displayed

You can change the number of images displayed on each Image Series Display Area by selecting an image upcount from the **Change Image Format** drop-down menu.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Click on the **Change Image Format** drop-down menu in the Image Series Display Area's title bar.
3. Select the number of images you wish to display in the region.

1	one image
2H	two horizontally oriented images

2V	two vertically oriented images
4	four images
6	six images
9	nine images
12	twelve images
Custom	user-defined number of images

11.5.3. Configure the Monitor Layout

You can change the number of Image Series Display Areas displayed in each monitor by selecting a display option from the **Monitor Regions** hot zone button in the **Function Bar**.

An Image Series Display Area is a region of the monitor which contains an image series. The Image Series Display Area can also be configured to display the images in a variety of layouts.

1. From either the Work Modes or Patient Jacket palette, open an exam..
2. Move the mouse cursor to the top of the screen to display the **Function Bar**.
3. Place your mouse cursor over the **Monitor Regions** hot zone button in the **Function Bar**.

   A drop-down menu appears.
4. Select the number of Image Series Display Areas you want to display in the monitors.

11.5.4. Custom Display Format

You can change the number of images displayed on each Image Series Display Area by selecting an image upcount from the **Change Image Format** drop-down menu. If you do not see the image upcount that you want, you can create a custom upcount.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Click on the **Change Image Format** drop-down menu in the Image Series Display Area's title bar.
3. Select the **Custom** option.

   The Custom Format dialog is displayed.
4. Click the mouse pointer on the grid at the point which represents the number of columns and rows you want to display the image's in.
5. Click on **OK**.

11.6. Connect Images

11.6.1. Link Image Series

Linking allows you to select multiple Image Series Display Areas and link them together so that they mirror each other's movements. This is a method for synchronizing different image series to display the same relative anatomical location.

If the linked series contain different numbers of images, the series with more images will advance past the point where the smaller series end. In this case, the Image Series Display Areas containing the smaller series will appear blank.

Create a Linked Image Series

1. From either the Work Modes or Patient Jacket palette, open the exams with the image series you wish to link.
2. Make sure that the image series are synchronized so that they show the same relative location in the patient's anatomy.
3. Place the mouse cursor over the **Connect** hot zone button in the Image Series Display Area's title bar. Do not click the mouse button.

   A drop-down menu is displayed.
4. Select the **Link** option.

   The displayed image series that can be linked are shown with white title bars.
5. Click on the title bars of the image series you want to link together.
6. To leave the connection mode, click anywhere but on a highlighted title bar.

Break a Linked Image Series

1. Place the mouse cursor over the **Connect** hot zone button in the Image Series Display Area's title bar. Do not click the mouse button.

   A drop-down menu is displayed.
2. Select the **Break Link** option.

   All the links from the selected image series are broken.

11.6.2. Cross Reference Image Series

With the Centricity™ Workstation software, you are able to connect related image series. This enables cross reference lines to depict the location of the image slice in the corresponding image. The **Cross Reference** function is available when multiple image display regions are selected that contain an image series and a corresponding scout. It is also available if the selected areas contain two series from the same exam with cross planes.

You can cross reference a series with any other series, as long as their elements have intersecting planes. By default, the application selects the first image in the series to establish the cross reference. In cases where there is more than one image in the series being cross references and the layout is in Sheet mode, you have the option to select a scout image to override the selection of the first image in the series.

Create a Cross Referenced Image Series

1. From either the Work Modes or Patient Jacket palette, open the exams with the image series you wish to cross reference.
2. The series (or series and localizor) must both be in either sheet or stack mode.
3. Place the mouse cursor over the **Connect** hot zone button in the Image Series Display Area's title bar. Do not click the mouse button.

   A drop-down menu is displayed.
4. Click on the **Cross Reference** option.

   The displayed image series that can be cross referenced are shown with white title bars.
5. Click on the title bars of the image series you want to cross reference.
6. To leave the connection mode, click any where but on a highlighted title bar.

Break a Cross Referenced Image Series

1. Place the mouse cursor over the **Connect** hot zone button in the Image Series Display Area's title bar. Do not click the mouse button.

   A drop-down menu is displayed.
2. Select the **Break Cross Reference** option.

   All the cross references for the selected image series are broken.

11.6.3. Multi-Monitor Sheet

With the Centricity™ Workstation you can have a single image series span across multiple monitors. This can only be done with image series that are in the Sheet mode.

When you are in the Multi-Monitor Sheet mode, changes on one monitor affect the images on all the Multi-Monitor Sheet monitors.

Create a Multi-Monitor Display

1. From either the Work Modes or Patient Jacket palette, open the exams with the image series you wish to span across monitors.
2. Place the mouse cursor over the **Connect** hot zone button in the Image Series Display Area's title bar. Do not click the mouse button.

   A drop-down menu is displayed.
3. Click on the **Multi-Monitor Sheet** option.

   The displayed image series that can be displayed in multi-monitor are shown with white title bars.
4. Click on the title bars of the display regions you want the selected series to span.
5. To leave the connection mode, click any where but on a highlighted title bar.

Break a Multi-Monitor Display

1. Place the mouse cursor over the **Connect** hot zone button on the Image Series Display Area's title bar. Do not click the mouse button.

   A drop-down menu is displayed.
2. Click on the **Break Multi-Monitor Sheet** option.

   All the images in the Multi-Monitor Sheet mode are displayed in their individual Image Series Display Areas.

11.7. Select and Reject Images

11.7.1. Select/Deselect All Images

Select/Deselect Button

The **Select**/**Deselect** toggle button in the Image Series Display Area's title bar allows you to select or deselect all images within a display region. When you click on the **Select** button, all the images are selected and the button label changes to **Deselect**. When you click on the **Deselect** button, all the images are deselected and the button label changes to **Select**. If there are any images that are not selected in the Image Series Display Area, the button displays the **Select** option.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Click on the **Select** button in an Image Series Display Area's title bar.

   All the images in the display region are highlighted with a white border and the **Select** button label changes to **Deselect**.
3. Click on the **Deselect** button in the Image Series Display Area's title bar.

   The white border around the selected images is removed and the **Deselect** button label changes to **Select**.

Image Functions drop-down menu

Selecting the **Select All** or **Deselect All** option from the **Image Functions** drop-down menu will select or deselect all the images within an active exam.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Move the mouse cursor to the top of the screen to display the **Function Bar**.
3. To select all the images, click on the **Image Functions** drop-down menu and select **Select All.**

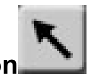
   All the displayed images are highlighted with a white border.
4. To deselect all the images, click on the **Image Functions** drop-down menu and select **Deselect All**.

   The white border is removed from all the selected images.

11.7.2. Select/Deselect Individual Images

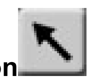
The **Selection** tool lets you select and deselect images, regions of interests, and image measurements. When you display an exam for the first time during a session, the **Selection** tool is selected by default.

Select Individual Images

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Selection**  tool from the Tools Palette.
4. Place the cursor over the desired image and single-click with the left mouse button.

   The selected image is highlighted with a thin white border.

Select More Than One Image

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Selection**  tool from the Tools Palette.
4. Single-click on the first image you want to select.

   The selected image is highlighted with a thin white border.
5. While pressing the **Ctrl** key, click on the other images you want to select.

   All the selected images are highlighted with thin white borders.

Deselect Images

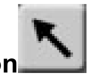
1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Select the **Selection**  tool from the Tools Palette.
4. Hold down the **Ctrl** key and single-click on the highlighted image(s) you want to deselect.

   The image is deselected.

11.7.3. Reject an Image

Before an exam is dictated, you can reject images that do not meet the quality assurance standards of your medical facility. When you reject an image, you must enter the reason. Rejected images are automatically placed in the Reject Analysis folder and can be displayed from within that folder for up to seven days (the time can be modified by the system administrator). If the Show Annotation feature is on, the reason for the image rejection and the name of the person who rejected the image are also displayed along with the image.

1. From either the Work Modes or Patient Jacket palette, open an exam that has not yet been dictated.
2. Open the Tools palette.

3. Select the **Selection** tool from the Tools palette.
4. Select the image you wish to reject.

   To select multiple images to reject, hold down the **Ctrl** key while selecting the additional images.
5. Move the mouse cursor to the top of the screen to display the **Function Bar**.
6. Click on the **Image Functions** drop-down menu and select **Reject Selected Images**.

   The Reject Image dialog box is displayed and contains the patient name, modality, and the number of images selected.
7. Type the reason for the image rejections in the **Comment** text box.
8. Click on **OK**.

   The images you rejected are removed from the exam folder and are added to the Reject Analysis folder inside the Quality Assurance folder.

11.7.4. Display Rejected Images

To display the contents of the Reject Analysis folder:

1. In the Work Modes palette, select a worklist from the Reject Analysis folder.
2. Select the patient exam with the rejected images you wish to view.
3. Click on the **Display Exams** button

   The rejected images are displayed in the Image View Area.
4. Press **Alt - Y** to display the annotations on the rejected images.

11.8. Send Images

11.8.1. Send an Image

The **Send Exam** functionality allows you to send exams to another DICOM device or to another facility. Exams can be sent in either **immediate mode** (sent immediately) or **batch mode** (placed in a queue and sent at a later time).

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. In the Image View Area, select the images you wish to send.
3. Move the mouse cursor to the top of the screen to display the **Function Bar**.
4. Click on the **Exam Functions** drop-down menu and select **Send Exam(s)**.

   The Send Exam dialog box is displayed.
5. Select the destination for the exams from the **Destination** drop-down menu.
6. Select a send mode.
7. Select a reason for sending the exams.
8. Click on **OK** to send the exam.

11.8.2. Send Image to a Remote Workstation

The **Send Exam to Remote Workstation** functionality in the Work Modes palette allows you to send exams to a remote workstation at another facility.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. In the Image View Area, select the images you wish to send.
3. Move the mouse cursor to the top of the screen to display the **Function Bar**.
4. Click on the **Exam Functions** drop-down menu and select **Send Exam to Remote Workstation**.

   The Send Exam to Remote Workstation dialog box is displayed.
5. Select the workstation you wish to send to.
6. Click on **OK** to send the exam.

11.8.3. Email Selected Images

You can email the images from an exam to another user.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. In the Image View Area, select the images you wish to email.
3. Move the mouse cursor to the top of the screen to display the **Function Bar**.
4. Click on the **Exam Functions** drop-down menu and select **Export Images**.
5. Select **Email Selected Images** from the **Export Images** sub-menu.

   The Email dialog is displayed.
6. Enter an email address in the **To** field.
7. Enter a subject in the **Subject** field.
8. Type a message for the email in the **Body** section.

   The image thumbnails, in JPEG format, are shown across the bottom of the Email dialog box.
9. Click on the **Send** button.

11.9. Image Folders

11.9.1. Image Folders Overview

The **Worklist** tab in the Utilities palette contains system-defined worklists and folders. You may use the folders in the **Worklist** tab to help organize patient exams and images.

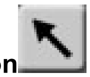
One of the folder types in the Worklist tab is the Image folder. Image folders are identified with an "**I**" icon. Sometimes they are called "Academic" or "Manual."

Note: Image folders are created by your system administrator.

Image folders may contain individual images rather than an entire exam. In addition, images from different exams can be contained within the same image folder.

11.9.2. Add Images to a Folder

Image folders are folders that contain a selection of images from one or more exams. These folders can be useful for teaching, conferences, or comparisons.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Select the **Selection** tool from the Tools Palette.
3. With the Selection tool, click on the image you wish to add to the folder.

   To select multiple exams, hold down the **Ctrl** key while selecting the additional exams.
4. Move the mouse cursor to the top of the screen to display the **Function Bar**.
5. Click on the **Image Functions** drop-down menu and select **Add Image to Folder**.

   The Move Selected Images to Folder dialog box appears and lists all of the available image folders.
6. Click on the folder you want to copy the selected images to.
7. Click on the **Add** button.

   The images are copied to the selected folder.

11.9.3. Remove Images from a Folder

If you are viewing an Image folder and decide that certain images do not belong in the folder, you can remove then with the **Remove from Folder** option in the **Image Functions** drop-down menu.

1. From either the Work Modes or Patient Jacket palette, open an exam with images you wish to remove.
2. Open the Tools palette.
3. Select the **Selection** tool from the Tools palette.
4. With the **Selection** tool, click on the image you want to remove from the folder.

   To select multiple images, hold down the **Ctrl** key while selecting the additional images.
5. Move the mouse cursor to the top of the screen to display the **Function Bar**.
6. Click on the **Image Functions** drop-down menu and select **Remove from Folder**.

   The selected images are immediately removed from the folder.

11.10. Save and Close Exams

11.10.1. Save an Exam

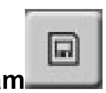
If you have made image manipulations, measurements, or annotations you can save them with the exam.

From the Exam Functions Drop-Down Menu

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Perform any manipulations, measurements or annotations necessary for the image.
4. Move the mouse cursor to the top of the screen to display the **Function Bar**.
5. Click on the **Exam Functions** drop-down menu and select **Save Current Exam**.

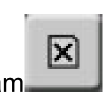
   Select **Save Current + Comparison** if you are making changes to a related comparison exam.

From the Save Exam Button

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Open the Tools palette.
3. Perform any manipulations, measurements or annotations necessary for the image.
4. Move the mouse cursor to the top of the screen to display the **Function Bar**.
5. Click on the **Save Exam**  button in the right corner of the **Function Bar**.

11.10.2. Close an Exam

When you are done viewing exams and wish to quit the Workstation application, you must close all opened exams using one of the following methods:

- Click on the Exam Functions drop-down menu in the Function Bar and select Close All Open Exams or Close Current + Comparisons.
- Click on the Close Exam  button in the right corner of the Function Bar.
- Press Ctrl - Alt - W on the keyboard

If you selected the **Save Changes to Exam and Comparisons When Closing Exam** option in the Utilities palette, you are not prompted to save your exam and the exam is saved automatically.

If you selected the **Prompt to Save Image Before Closing** option in the Utilities palette, you are prompted to save the exam before closing.

11.10.3. Save a Report and Images

After you complete a report, you can save the report and the associated images to your hard drive.

1. From either the Work Modes or Patient Jacket palette, open an exam with the images you wish to save.
2. Open the Tools palette.
3. In the Image View Area, select the images you wish to save.
4. Move the mouse cursor to the top of the screen to display the **Function Bar**.
5. Click on the **Exam Functions** drop-down menu and select **Export Images**.
6. Select **Save Selected Images** from the **Export Images** sub-menu.

   The Save As dialog is displayed.
7. Enter a file name for the images in the **File Name** field.
8. Click on the **Browse** button and navigate to the location where you wish to save the images.
9. Click on the **Include Report** check box to include the text version of the report with the images.

   The thumbnails of the selected images, in JPEG format, appear across the bottom of the Save As dialog.
10. Click on **OK** to save the images and report

Chapter 12. Default Display Protocols

12.1. Default Display Protocol Overview

The Default Display Protocols (DDPs) dictate how images are displayed when an exam and, if appropriate, its related historical exams are opened for viewing. They specify how each monitor is configured and assign a specific series to a specific display region.

DDPs determine the best method for displaying exams based on:

- The exam modality
- The exam procedure and body parts
- Number of monitors
- Which series is displayed in what region
- Whether any comparison studies are selected.
- Your user log in

12.1.1. DDP Types

There are two types of Default Display Protocols:

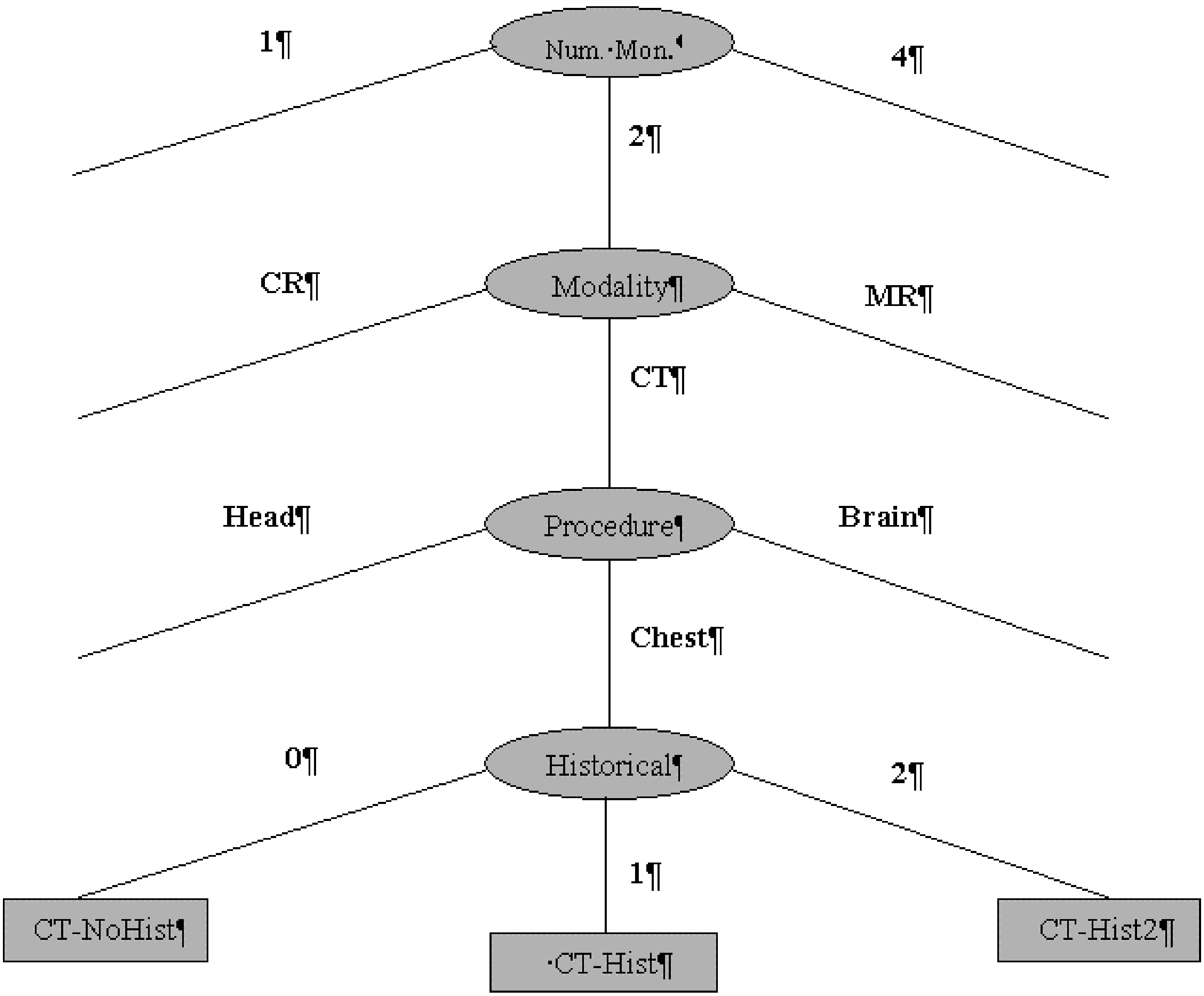
- Factory-installed DDPs: DDPs set up by GE to support basic procedures. This includes a generic DDP for image display for modalities that do not have a modality-specific DDP available.
- User DDPs: DDPs created by the user.

The Centricity™ Workstation comes with seven sets of default DDPs that are factory installed – CR, CT, MR, US, PT, NM, and PT. You can select to use these DDPs to view exams or use them as a starting point to create your own DDPs.

12.1.2. DDP Functionality

When opening an exam, there are two different DDP issues to consider. The first is selecting an appropriate DDP and the second is applying the DDP to the exam.

DDPs are selected based on a decision tree. A decision tree is a data structure used to decide which DDP to use based on your current monitor configuration, type of exam (modality), procedure, and whether the current exam has historical or not. The following is an example of a decision tree.



In this example, any Chest CT exam that is opened on a two-monitor system, with one historical available, will use CT-Hist as its DDP.

Note: **If any of the node information changes (i.e., the number of monitors is four instead of two), the chosen DDP is completely different.**

Once you decide which DDP to use, the next step is to apply it. A DDP usually contains general information, such as DDP name, number of monitors, sheet type description, image descriptions, etc., as well as specific information that is related to the exam procedure and groups. The parameters for each of the three major exam types are shown below:

MR Image Type, Contrast Agent, Echo Time, Repetition Time, Flip Angle, Series Number, Scan Sequence, Nearest Orthogonal

CT Image Type, Contrast Agent, Series Number, Scan Sequence, Nearest Orthogonal

CR Image Type, View Position

When opening an exam, the Default Display Protocol compares series parameters for the study to be displayed with those specified in the DDP. Those which match best are displayed in the corresponding regions.

12.2. DDP Limitations

The following is a limitation on DDPs.

- A DDP name cannot exceed 30 characters in length.
- Illegal characters are: **. " : ***.

12.3. Apply a DDP

12.3.1. Apply A DDP to an Exam

When an exam is currently opened, the DDP for the exam is displayed in the **Display Functions** drop-down menu in the **Function Bar**. The Display Functions drop-down menu lists the DDPs that you use the most. You can configure the DDPs displayed in this menu in the Utilities palette.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Move the mouse cursor to the top of the screen to display the Function Bar and click on the **Display Functions** drop-down menu.
3. Select the DDP you wish to apply to the currently displayed images.

12.3.2. Apply Another User's DDP to an Exam

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Move the mouse cursor to the top of the screen to display the **Function Bar**.
3. Click on the **Display Functions** drop-down menu and select **More Display Protocols**.

   The More Display Protocols window is displayed.

Note: If you do not currently have any user DDPs or do not have any favorite DDPs selected, then this menu option will read Other Display Protocols.

4. Click on the **User for** drop-down field and select a user whose DDP you wish to apply.

   All the DDPs for the selected user are displayed in the list box.

5. Select the DDP you wish to apply.
6. Click on the **Apply** button.

12.4. Create and Manage DDPs

12.4.1. DDP Setup Overview

You create DDPs under the **DDP Setup** tab in the **Utilities** palette. To open the Utilities palette, move the mouse cursor to the bottom of the screen to display the Workstation **Taskbar** and click on the **Utilities** button.

The DDP Setup tab has several areas for selecting, modifying and creating DDPs. In the **Assistant** section you can use the DDP Setup Utility to walk through on-screen instructions for modifying an existing DPP or creating a new DDP.

If you wish to modify, copy or delete a DDP, the **DDP Select** section displays a list of available DDPs based on a user that you select.

The **Display Protocol Workspace** section provides virtual monitor icons to create the DDPs layout information.

The **DDP Description** section displays the modality and procedure information that is used when the DDP is applied to an opened exam.

You can select values for region specific parameter information in the **Matching Parameters** section. These values are used to determine the exam series position when it is opened.

The **Tool Parameters** section provides region specific tool information for Window/Level, Magnification, Color and Orientation. These values are used to determine what tools are applied to each region when an exam is displayed.

12.4.2. Using the DDP Assistant

The DDP Assistant, located in the Utilities palette, provides on-screen instructions for creating and saving DDPs.

DDP Assistant

1. Open the Utilities palette.
2. Click on the **DDP Setup** tab.

   In the Assistant section you will see the following message:

   “I will be your Assistant. Press the Next button to begin.”
3. Click on the **Next** button in the Assistant text area.

   The DDP Select section is highlighted with a white border.

DDP Select

1. Click on the **Create New** button in the DDP Select section.
2. Click on the **Next** button in the Assistant text area.

The Display Protocol Workspace section is highlighted with a white border. In this section you will use the hot zone buttons above the virtual monitors to configure the monitors and regions.

Display Protocol Workspace

Configure the Monitor Layout

1. Place the mouse cursor on the **Monitor** hot zone button to display a drop-down menu.

   The Monitor hot zone allows you to change the number of monitors in the current DDP.
2. Select the appropriate number of monitors to be used with the DDP.

Configure the Image Series Display Layout

1. Click on a monitor icon in the Display Protocol Workspace section.

   The selected monitor is highlighted in white.
2. Place the mouse cursor on the **Region** hot zone button to display a drop-down menu.

   The Region hot zone allows you to change the number of regions in a selected monitor.
3. Select the desired number of regions for that monitor.

Configure the Number of Images to Display

1. Select a region in the monitor icon in the Display Protocol Workspace section.

   The selected region is highlighted in white.
2. Move the mouse cursor over the **Images** hot zone button to display a drop-down menu.

   The Images hot zone allows you to change the number of images displayed in the currently selected region.
3. Select the desired up count for the region.

Configure the Types of Series Connectors

1. Select a region in the monitor icon in the Display Protocol Workspace section

   The selected region is highlighted in white.
2. Move the mouse cursor over the **Connect** hot zone button to display to display a drop-down menu.

   You can create connections for Links, Multi-Monitors, and Cross References. When a connection is created, the region display a “L,” “M,” or “X” in the lower left corner of the monitor icons.
3. Select the type of connection you would like to make.

   The available regions that can be connected are highlighted with a gray square.
4. Click on the region(s) you wish to connect.
5. Click on any non-highlighted region to finish the connection.

6. To break or cancel a connection. Click on the region that is connected and place the mouse cursor over the **Connections** hot zone button. From the drop-down menu select the appropriate break. The connection markers are removed from the regions.

Example: If you wish to break a link connection, click on a region with a "L" marker. Place the mouse cursor over the Connect hot zone button and select Break Link.

7. Click on the **Next** button in the Assistant text area.

   The DDP Description section is highlighted with a white border.

12.5. DDP Description

1. Check the **Save the Current Display Protocol as default** check box to have the DDP applied as the default DDP for exams with the selected modality and procedures.

   If the check box is not selected, the DDP is not applied to any exam by default and the **Body Part** and **Procedure** list boxes are disabled.
2. Click on the **Modality** drop-down field and select the modality for which the DDP will be used.
3. In the **Body Part** list box, place a check mark in front of each body part that you wish to associate with the DDP.
4. In the **Procedure** list box, place a check mark in front of each procedure that you wish to use with the DDP.
5. Click on the **Next** button in the Assistant text area.

   The Matching Parameters section is highlighted with a white border.

12.6. Matching Parameters

1. Click on a region in the Display Protocol Workspace section so that it is highlighted.
2. In the Matching Parameters section, enter the appropriate values for the text fields.

   The text fields are dependent on what modality is selected in the DDP Description section. The values entered into the available text fields should describe the series that should be loaded into the selected region.
3. Click on the **Next** button in the Assistant text area.

   The Tools Parameter section is highlighted with a with a white border.

12.7. Tools Parameter

1. Click on a region in the Display Protocol Workspace section so that it is highlighted.

12.7.1. Set the Window/Level Values

1. Select the check box to the right of the **Window** and **Level** fields to set Window/Level values for the selected region.
2. Click on the **Presets** drop-down field and select a preset Window/Level.

12.7.2. Set the Magnification Values

1. Select the check box to the right of the **Magnification** field.
2. Enter a magnification value for the selected region.

12.7.3. Set the Image Orientation and Color

1. Select the check box to the right of the sample image to change to set the orientation and color for the selected region when an image is displayed.
2. Click on the **Flip Horizontal** button to have the images for the selected region displayed flipped horizontally.
3. Click on the **Flip Vertical** button to have the images for the selected region displayed flipped vertically.
4. Click on the **Rotate 90° Clockwise** button to automatically rotate the images for the selected region when opened.
5. Click on the **Rotate 90° Counter-Clockwise** button to automatically rotate the images for the selected region when opened.
6. Click on the **Invert Gray Scale** button to invert the images when they are opened for the selected region.
7. Click on the **Next** button in the Assistant text area.

12.8. Save

1. Click on the **Save** button to save the newly created DDP.

12.8.1. Manually Create a DDP

You can use the system default DDPs that are factory installed on your system to create your own DDPs. You can save user-created layouts for different modalities, body parts, and procedure codes.

Note: Saved display protocols cannot be modified. Any changes to a saved protocol must be saved using a different name.

1. Open the Utilities palette.
2. Click on the **DDP Setup** tab.
3. Click on the **Create New** button in the DDP Select section.

12.9. Display Protocol Workspace

In the Display Protocol Workspace section you use the hot zone buttons above the virtual monitor icons to configure the monitors and regions when displaying an exam with a DDP.

12.9.1. Configure the Monitor Layout

1. Place the mouse cursor on the **Monitor** hot zone button to display a drop-down menu.

   The **Monitor** hot zone allows you to change the number of monitors in the current DDP.
2. Select the appropriate number of monitors to be used with the DDP.

12.9.2. Configure the Image Series Display Area Layout

1. Click on a monitor icon in the Display Protocol Workspace section.

   The selected monitor is highlighted in white.
2. Place the mouse cursor on the **Region** hot zone button to display a drop-down menu.

   The **Region** hot zone allows you to change the number of regions in a selected monitor.
3. Select the desired number of regions for that monitor.

12.9.3. Configure the Number of Images to Display

1. Select a region in the monitor icon in the Display Protocol Workspace section.

   The selected region is highlighted in white.
2. Move the mouse cursor over the **Images** hot zone button to display a drop-down menu.

   The **Images** hot zone allows you to change the number of images displayed in the currently selected region.
3. Select the desired up count for the region.

12.9.4. Configure the Types of Series Connections

1. Select a region in the monitor icon in the Display Protocol Workspace section.

   The selected region is highlighted in white.
2. Move the mouse cursor over the **Connect** hot zone button to display to display a drop-down menu.
3. You can create connections for Links, Multi-Monitors, and Cross References. When a connection is created, the region display a “L,” “M,” or “X” in the lower left corner of the monitor icon.
4. Select the type of connection you would like to make.

   The available regions that can be connected are highlighted with a gray square.
5. Click on the region(s) you wish to connect.
6. Click on any non-highlighted region to finish the connection.

To break or cancel a connection. Click on the region that is connected and place the mouse cursor over the **Connect** hot zone button. From the drop-down menu select the appropriate break. The connection markers are removed from the regions.

Example: If you wish to break a link connection, click on a region with the "L" marker. Place the mouse cursor over the Connections hot zone button and select Break Link from the drop-down menu.

12.10. DDP Description

1. In the DDP Description section, check the **Save the Current Display Protocol as default** check box to have the DDP applied as the default DDP for exams with the selected modality and procedures.

   If the check box is not selected, the DDP is not applied to any exam by default and the **Body Part** and **Procedure** list boxes are disabled.
2. Click on the **Modality** drop-down field and select the modality for which the DDP will be used.
3. In the **Body Part** list box, place a check mark in front of each body part that you wish to associate with the DDP.
4. In the **Procedure** list box, place a check mark in front of each procedure that you wish to use with the DDP.

12.11. Matching Parameters

1. Click on a region in the **Display Protocol Workspace** section so that it is highlighted.
2. In the **Matching Parameters** section, enter the appropriate values for the text fields.

   The text fields are dependent on what modality is selected in the DDP Description section. The values entered into the available text fields should describe the series that should be loaded into the selected region.

12.12. Tools Parameter

1. Click on a region in a monitor icon in the Display Protocol Workspace section so that it is highlighted.

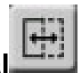
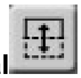
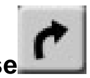
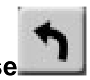
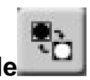
12.12.1. Set the Window/Level Values

1. Select the check box to the right of the **Window** and **Level** fields to set Window/Level values for the selected region.
2. Click on the **Presets** drop-down field and select a preset Window/Level.

12.12.2. Set the Magnification Values

1. Select the check box to the right of the **Magnification** field.
2. Enter a magnification value for the selected region.

12.12.3. Set the Image Orientation and Color

1. Select the check box to the right of the sample image to change to set the orientation and color for the selected region when an image is displayed.
2. Click on the **Flip Horizontal** button to have the images for the selected region displayed flipped horizontally.
3. Click on the **Flip Vertical** button to have the images for the selected region displayed flipped vertically.
4. Click on the **Rotate 90° Clockwise** button to automatically rotate the images for the selected region when opened.
5. Click on the **Rotate 90° Counter-Clockwise** button to automatically rotate the images for the selected region when opened.
6. Click on the **Invert Gray Scale** button to invert the images when they are opened for the selected region.

12.13. Save the DDP

1. Click on the **Save** button to save the newly created DDP.

12.13.1. Modify a DDP

1. Open the Utilities palette.
2. Click on the **DDP Setup** tab.
3. Click on the **DDPs for** drop-down field and select a user from the list.

   The selected user's DDP information is displayed in a drop-down menu beneath the **DDPs for** drop-down field.
4. Click on the drop-down menu beneath the **DDPs for** drop-down field and select the DDP you wish to modify.
5. Modify the DDP settings.

12.13.2. Copy a DDP

From the Utilities Palette

1. Open the Utilities palette.
2. Click on the **DDP Setup** tab.
3. Click on the **DDPs for** drop-down field and select a user from the list.

   The selected user's DDP information is displayed in a drop-down menu beneath the **DDPs for** drop-down field.
4. Click on the drop-down menu beneath the **DDPs for** drop-down field and select the DDP you wish to copy.

5. Click on the **Copy** button.

   If the name of the DDP you are copying is the same as one of your existing DDPs, the Copy Display Protocol As window is displayed.
6. Enter a new name for the DDP you are copying and click on **OK**.

   The newly named DDP is copied to your DDP list.

From the Image View Area

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Move the mouse cursor to the top of the screen to display the **Function Bar**.
3. Click on the **Display Functions** drop-down menu and select **Copy**.

   The Copy Default Display Protocol window is displayed.
4. Click on the **DDPs for** drop-down field and select a user from the list whose DDP you wish to copy.

   The selected user's DDP information is displayed beneath the **DDPs for** drop-down field.
5. Select the DDP you wish to copy.
6. Click on the **Copy** button.

   If the name of the DDP you are copying is the same as one of your existing DDPs, the Copy Display Protocol As window is displayed.
7. Enter a new name for the DDP and click on **OK**.

12.13.3. Delete a DDP

From the Utilities Palette

1. Open the Utilities palette.
2. Click on the **DDP Setup** tab.
3. Select one your DDP that you wish to delete from the drop-down menu beneath the **DDPs for** drop-down menu.
4. Click on the **Delete** button.

   A pop-up window is displayed and asks if you are sure you want to delete the DDP.
5. Click on **OK** to delete the DDP.

From the Image View Area

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Move the mouse cursor to the top of the screen to display the **Function Bar**.
3. Click on the **Display Functions** drop-down menu and select **Delete**.

   The Delete Display Protocol window is displayed with a list of your available DDPs.
4. Select the DDP you wish to delete and click on the **Delete** button.

   A pop-up window is displayed and asks if you are sure you want to delete the DDP.
5. Click on **OK** to delete the DDP.

12.13.4. Save a DDP

If you modify the exam display in the Image View Area, you can save the customized layout as a DDP for future use.

1. From either the Work Modes or Patient Jacket palette, open an exam.
2. Modify the layout for the display of the exam
3. Move the mouse cursor to the top of the screen to display the **Function Bar**.
4. Click on the **Display Functions** drop-down menu and select **Save**.

   The Save window is displayed.
5. Check the **Save Current Default Display Protocol As Default** check box if you want to use the new DDP as the default DDP when opening exams.
6. In the **Body Part** list box, place a check mark in front of each body part that you wish to associate with the DDP.
7. In the **Procedure** list box, place a check mark in front of each procedure that you wish to use with the DDP.
8. Enter a name for the new DDP.
9. Click on the **Save** button.

12.13.5. DDP Favorites

Centricity™ Workstation allows you to select which DDPs you would like to see and in what order in the **Display Functions** drop-down menu.

Configure the DDP List

1. Open the Utilities palette.
2. Click on the **DDP Favorites** tab.
3. Select either the **GE Display Protocol** or **User Display Protocol** radio button to display a list of DDPs in the **Available User Protocols** list box from which you can select your favorite DDPs.

   You can toggle back and forth between the lists and select DDPs from both lists.
4. Select the DDP you wish to add to your favorites list and click on the **Add to Favorites** button.

   The selected DDP is moved to the **Selected Favorites** list box.
5. In the **Selected Favorites** list box, highlight a DDP and click on either the **Move Up** or **Move Down** button to place the DDPs in the order you would like for them to appear in the **Display Functions** drop-down menu.

Apply a DDP from the List

1. Display an exam's images in the Image View Area.
2. Click on the **Display Functions** drop-down menu in the **Function Bar**.
3. Select the DDP you wish to apply to the currently displayed images.

12.14. System DDPs

12.14.1. CR System DDPs

The DDPs which the Centricity™ Workstation initially provides as defaults for CR exams combine all the images of an exam into one image series. The CR DDPs generally employ a simple 1:1 image up count (one image for one monitor). In some cases, higher image Pocahontas may be used. For example, the PA/Lateral CR uses a 2:1 image up count (two images for one monitor).

These DDPs may also be used for DX images.

CR-NoHist	This protocol is applied when a standard exam is opened without any historical exams. All the images in the exam are combined into one series.
CF-Hist	This protocol is issued when a standard CR exam is opened along with one or more historical exams. The image in each exam are combined into one image series for that particular exam.
CR-Trend	Automatically searches for and displays historical exams.
CR-Trend Multiple	
CR-PaLat-NoHist	This display protocol is intended to view a current Pa/Lat exam without any historical exams.
CR-PaLat-Hist	This display protocol is intended to view Pa/Lat exams along with related historical exams.
CR-Survey-NoHist	Intended to view CR exams that contain multiple images. This DDP is only applied to the current exam. All images in the exam are combined into one image series.
CR-Survey-Hist	Intended to view a CR exam with multiple images. This DDP is applied when viewing the current exam and one historical exam. All images in each exam are combined into one image series.
CR-Survey-Trend	This DDP is intended to view a CR exam that contains multiple images. This DDP is applied when viewing the current exam and up to three historical exams. All images in each exam are combined in one image series.

12.14.2. CT System DDPs

The DDPs which govern the display of CT exams take into account the presence of scout (localizer) images within the exams. Though scout images may either be contained within a slice image series or in a separate series, they are automatically separated into a distinct image series by the Centricity™ Workstation.

CT-NoHist	This display protocol displays images in the same manner as CT-NoHist+S without any separate scout image series display regions.
CT-NoHist+S	This display protocol display image containing scout images without any related historical exams.
CT-Hist+S	This display protocol is applied whenever a CT exam containing scout images is opened along with related historical exams.
CT-Hist	This display protocol displays images in the same manner as CT-Hist+S without any separate scout image series display regions.
CT-Hist-U/L+S	
CT-Hist-U/L	This display protocol displays images in the same manner as CT-Hist-U/L+S without any separate scout image series display regions.
CT-Hist-L/R+S	
CT-Hist-L/R	This display protocol displays images in the same manner as CT-Hist-L/R+S without any separate scout image series display regions.
CT-Hist-Next+S	The intent of this protocol is to provide an alternative method for displaying current and historical CT exams on a four monitor system.
CT-Hist-Next	This display protocol displays images in the same manner as CT-Hist-Next+S without any separate scout image series display regions.
CT-Trend+S	This protocol accommodates the display of the current exam and up to three historical exams.
CT-Trend	This display protocol presents images according to the protocol CT-Trend+S without any separate scout image series display regions.
CT-Triphasic-NoHist	
CT-Triphasic-Hist	
CT-Stacks-NoHist	This protocol will only display images for the current exam.
CT-Stacks-Hist	This protocol display images for the current exam and the first (most recent) historical exam.
CT-Stacks-Trend	This protocol will display images for the current exam and up to three historical exams.

12.14.3. MR System DDPs

The DDPs which govern the display of MR exams take into account the presence of scout (localizer) images within the exams. Though scout images may either be contained within a slice image series or be in a separate series, they are automatically separated into a distinct image series by the Centricity™ Workstation.

MR-NoHist+S	This display protocol is applied whenever an MR exam containing scout images is opened without any related historical exams.
MR-NoHist	Displays images in the same manner as MR-NoHist+S without any separate scout image series display regions.
MR-Hist+S	Applied by default whenever an MR exam containing scout images is opened along with related historical exams.
MR-Hist	Display images in the same manner as MR-Hist+S without any separate scout image series display regions.
MR-Trend+S	This protocol displays the current exam and up to three historical exams.
MR-Trend	This display protocol displays images in the same manner as MR-Trend+S without any separate scout image series display regions.
MR-Hist-U/L+S	
MR-Hist-U/L	This display protocol displays images in the same manner as MR-Hist-U/L+S without any separate scout image series display regions.
MR-Hist-L/R+S	
MR-Hist-L/R	This display protocol displays images in the same manner as MF-Hist-L/R without any separate scout image series display regions.
MR-Stacks-Hist	Displays images for the current exam and the first (most recent) historical exam.
MR-Stacks-Trend	This protocol will display images for the current exam and up to three historical exams.

12.14.4. PT System DDPs

PT exams are displayed with the same series/groups produced during acquisition time. The default DDPs supplied for PT exams display Emission and Transmission images, as well as multi-frame series, if available.

The PT DDPs use a three-layout scheme. The first and second layouts usually contain a 1X1 sheet, while the third contains a Cine Stack mode.

Different types of PT layouts for each monitor are:

DDP: PT-NoHist

This DDP is used as the default for standard PT exam with no historicals opened.

1 Monitor

- Monitor 1 will have three layouts:
  - Layout 1: 1 on 1, first image

  - Layout 2: 1 on 1, first image
  - Layout 3: Cine Stack mode, first image

2 Monitor (Left to Right)

- Monitor 2 (Left) will have two layouts:
  - Layout 1: 1 on 1, first image
  - Layout 2: 1 on 1, first image
- Monitor 1 (Right) will have one layout:
  - Layout 1: Cine Stack mode, first image

4 Monitor (Left to Right)

- Monitor 4 (1st Left) will have one layout:
  - Layout 1: 1 on 1, first image
- Monitor 3 (2nd Left) will have one layout:
  - Layout 1: 1 on 1, first image
- Monitor 2 (3rd left) will have one layout:
  - Layout 1: Cine Stack mode, first image
- Monitor 1 (4th left) will have no layouts

DDP: PT-Hist

This DDP is used as the default for a standard PT exam with one or more historicals opened.

1 Monitor

- Monitor 1 will have three layouts
  - Layout 1: 1 on 1, first image of current exam
  - Layout 2: 1 on 1, first image of current exam
  - Layout 3: Cine Stack mode, first image of current exam

2 Monitor (Left to Right)

- Monitor 2 (Left) will have two layouts:
  - Layout 1: 1 on 1, first image of previous exam
  - Layout 2: 1 on 1, first image of previous exam
- Monitor 2 (Right) will have two layouts:
  - Layout 1: 1 on 1, first image of current exam
  - Layout 2: 1 on 1, first image of current exam

4 Monitor (Left to Right)

- Monitor 4 (1st left) will have no layouts
- Monitor 3 (2nd left) will have no layouts
  - Layout 1: 1 on 1, first image of previous exam
  - Layout 2: 1 on 1, first image of previous exam
- Monitor 1 (4th left) will have no layouts

12.14.5. US System DDPs

Ultrasound (US) exams are viewed differently from other modalities. Typically, US exams are read on a two (2) monitor system, with historical exams displayed in MMS mode in the upper layouts and current exams in the MMS mode in the lower layouts of the monitors.

DDP: USHist

This DDP layout is used as the default for standard US exams, with no open historicals.

1 Monitor

- Monitor 1 will have two layouts:
  - Layout 1: 4 on 1, first four images
  - Layout 2: Cine Stack mode, first image

2 Monitor (Left to Right)

- Monitor 2 (Left) will have one layout:
  - Layout 1: 4 on 1, first four images
- Monitor 2 (Right) will have one layout:
  - Layout 1: Cine Stack mode, first image

4 Monitor (Left to Right)

- Monitor 4 (1st Left) will have no layout:
- Monitor 3 (2nd Left) will one layout:
  - Layout 1: 4 on 1, first four images
- Monitor 2 (3rd Left) will have one layout:
  - Layout 1: Cine Stack mode, first image
- Monitor 1 (4th Left) will have no layouts

DDP: US-Hist

This DDP is used as the default for a standard US exam, with open historicals.

1 Monitor

- Monitor 1 will have two layouts:
  - Layout 1: 2 on 1, first images of historical exam
  - Layout 2: 2 on 1, first two images of current exam

2 Monitor

- Monitor 2 (Left) will have two layouts:
  - Layout 1: 2 on 1, first two images of historical exam (MMS with first layout of 2nd monitor)
  - Layout 2: 2 on 1, first two images of current exam (MMS with second layout of 2nd monitor
- Monitor 1 (right) will have two layouts:
  - Layout 1: 2 on 1, third and fourth images of historical exam (MMS with first layout of 1st monitor)
  - Layout 2: 2 on 1, third and fourth images of current exam (MMS with second layout of 1st monitor)

4 Monitor (Left to Right)

- Monitor 4 (1st Left) will have two layouts:
  - Layout 1: 2 on 1, first two images of historical exam (MMS with first layout of 3rd monitor)
  - Layout 2: 2 on 1, first two images of current exam (MMS with second layout of 3rd monitor)
- Monitor 3 (2nd Left) will have two layouts:
  - Layout 1: 2 on 1, third and fourth images of historical exam (MMS with first layout of 1st monitor)
  - Layout 2: 2 on 1, third and fourth images of current exam (MMS with second layout of 1st monitor)
- Monitor 2 (3rd Left) will have two layouts:
  - Layout 1: Cine Stack mode for historical exams, first image
  - Layout 2: Cine Stack mode for current exams, first image
- Monitor 1 (4th Left) will have no layouts

12.14.6. NM System DDPs

Nuclear Medicine (NM) exams are viewed on a two monitor system. Typically, an NM exam is read with historical data displayed on the left monitor and the current data displayed on the right monitor. Each monitor has two layouts with different sheet types.

DDP: NM-NoHist

This DDP is used as the default for standard nuclear medicine exams, with no open historicals.

1 Monitor

- Monitor 1 will have two layouts:
  - Layout 1: 2 on 1, full monitor
  - Layout 2: 6 on 1 first six images

2 Monitor (Left to Right)

- Monitor 2 (Left) will have one layout:
  - Layout 1: 2 on 1, full monitor
- Monitor 1 (Right) will have one layout:
  - Layout 1: 6 on 1, first six images

4 Monitor (Left to Right)

- Monitor 4 (1st Left) will have no layout
- Monitor 3 (2nd Left) will have one layout:
  - Layout 1: 2 on 1, full monitor
- Monitor 2 (3rd Left) will have one layout:
  - Layout 1: 6 on 1, first six images
- Monitor 1 (4th Left) will have no layout

DDP: NM-Hist

This DDP is used as the default for a standard nuclear medicine exam, with open historicals.

1 Monitor

- Monitor 1 will have two layouts:
  - Layout 1: 2 on 1, first two images of previous exam
  - Layout 2: 2 on 1, first two images of current exam

2 Monitor (Left to Right)

- Monitor 2 (Left) will have one layout
  - Layout 1: 2 on 1, first two images of previous exam
- Monitor 1 (Right) will have one layout:
  - Layout 1: 2 on 1, first two images of current exam

4 Monitor (Left to Right)

- Monitor 4 (1st Left) will have one layout
  - Layout 1: 2 on 1, first two images of previous exam
- Monitor 3 (2nd Left) will have one layout
  - Layout 1: 6 on 1, first six images of previous exam
- Monitor 2 (3rd Left) will have one layout:
  - Layout 1: 2 on 1, first two images of current exam
- Monitor 1 (4th Left) will have one layout:
  - Layout 1: 6 on 1, first six images of current exam

Chapter 13. Image Grouping Information

13.1. Image Grouping

An image group is a subset of an image series for a selected exam. Series and image groups are named by either a series descriptor or a string based on the exam's modality. Image groups are identified by a letter after the series identification number (e.g., Se: 3a or Se: 3b).

Note: The "Series Description" parameter defaults to being turned off (weight = 0). Contact your site system administrator to turn on.

13.2. Layout Manager Representation of Image Groups

The layout manager shows the list of series for the selected exam. They will be in acquired order, with the exception of the scouts (labeled as localizer) which are always put at the end. Following this is a list of the grouping parameters that characterize that group. Parameters for which no values were found are omitted. The last portion of the name indicates the number of images in the group.

Triphasic CT exams have the phase (e.g. Ph1) indicated in the group name.

Series #	String	# of Images
#	Series Description	# of Images
#	Modality Specific String	# of Images

Formula for Modality Specific String:

[Image Plane] [Scanning Sequence] [Slice Thickness] [Echo Time] [Referential Time] [Contrast]

13.3. Grouping Parameters

Each series in an exam may be divided into different groups, using the following parameters to distinguish groups:

- For CR exams: ImageType, ViewPosition
- For CT exams: ImageType, Contrast Agent, SeriesNumber, ScanSequence, Nearest Orthogonal
- For MR exams: ImageType, Contrast Agent, Echo Time, Repetition Time, Flip Angle, SeriesNumber, ScanSequence, Nearest Orthogonal

13.4. DDP Layouts

Basically, each group is scored against each layout for parameter matches.

The relative importance of each parameter may be emphasized using weights. The higher the importance, the higher the weight. By default, all parameters are weighted equally (weight=1). The valid range is from 0-1000. Assigning a weight of “0” will eliminate the parameter from matching consideration (it will be ignored).

13.5. IGscore Table

To populate a DPP, the IGscore Table class manages the table that matches image series with image series rules for the DPP layout.

The get BestMatch method builds the table and assigns the matches as shown:

	Series 1	Series 2	Series 3	Series 4	Series 5	Series 6
Layout 1	5	0	0	2	2	1
Layout 2	3	4	3	1	0	0
Layout 3	0	2	0	4	1	3

Each entry in the table is the match score when an image series is matched with the image series rules for a DPP layout. Matches are based on series parameters (i.e., projection, pulse sequence, etc.). The higher the match score, the better the match. In this example, you are trying to match six image groups to three layouts.

The best match for each layout is determined as follows:

- Look for the series with the highest match number for each layout.

When found, take that layout and group out of contention (i.e. assign a match) by setting all other score values for that row and column to 0. Then repeat this for each successively lower match score until all layouts are matched, or you reach 0.

If a particular match score is found in the table more than once, it is okay if it is not in the same column or row. If it is, look at the appropriate column totals (the lower the totals, the less likely that group will match), and take the lowest one. If you still do not get a match, the use the highest match score.

The previous table is a basic example, since each layout has only one group that has the highest match score for it (layout 1 matches group 1, layout 2 matches group 2, layout 3 matches group 4). For more complex cases where more than one group has the same score for a given rule, this algorithm can be used.

13.6. Nearest Orthogonal

The nearest orthogonal is determined from the image orientation information. It is the orthogonal plane that the images are closest to (axial, sagittal or coronal). Images are grouped by nearest orthogonal rather than by precise orientation so that exams where there are small changes in orientation between images (e.g. some spinal axial MRs) will still have all the images grouped together appropriately. If the image orientation information is not available, the nearest orthogonal is marked as unknown.

When found, take that layout and group out of contention (i.e. assign a match) by setting all other score values for that row and column to 0. Then repeat this for each successively lower match score until all layouts are matched, or you reach 0.

If a particular match score is found in the table more than once, it is okay if it is not in the same column or row. If it is, look at the appropriate column totals (the lower the totals, the less likely that group will match), and take the lowest one. If you still do not get a match, the use the highest match score.

The previous table is a basic example, since each layout has only one group that has the highest match score for it (layout 1 matches group 1, layout 2 matches group 2, layout 3 matches group 4). For more complex cases where more than one group has the same score for a given rule, this algorithm can be used.

Note: For the CR DDPs supplied with PathSpeed, all the image groups are combined, so the group shown in the layout manager is just one group of all images.

13.7. Image Ordering within Groups

13.7.1. CT and MR Slice Ordering

In the user preferences you can select to have images arranged by image number. See “Image Display Order Options” on page 10|10.

Centricity orders images by slice position or slice location if the information is available. By default the Centricity Workstation does not order the images by image number. This helps to handle image out-of-order issues correctly. CR and other modalities are ordered by image number (i.e. acquisition image number, not the order they were sent to the database).

The Centricity workstation software should order CT and MR exams as follows:

- Axial: Superior to Inferior (i.e. head to feet) (decreasing z)
- Sagittal: left to right (decreasing x)
- Coronal: Posterior to anterior (decreasing y).

One problem with the above standards is that head exams are typically read feet to head. To support this, the Centricity Workstation properties file allows a list of body parts (or procedure codes) to be specified when the order needs to be reversed (feet to head). For flexibility, a separate property is available for each orthogonal direction and for each modality (CT or MR).

The property entry is a list of comma-separated strings that can take the following forms.

- HEAD: Body Part (or procedure code) is “HEAD”
- >HEAD: Body Part (or procedure code) contains the string, e.g. “HEAD and NECK”
- ALL: All Body Parts (or procedure codes).

Note that all entries are case-insensitive.

By default, the PathSpeed Workstation property entry will be “>head,>neck,>brain” for the CT and MR axial ordering, and blank for the other orthogonals. This will reverse standard ordering for Head, Neck and Brain procedures for CT and MR so that the ordering is feet to head.

Note: If mandatory image grouping is turned off, and the required Image Position, Slice Location or Patient Position information is not available, images will be ordered by acquired image number. This may not be the correct order, depending on the scanner. It is recommended that mandatory grouping is on for CT and MR exams.

13.8. Triphasic CT Exams

For triphasic CT exams, special image ordering is used. Images are ordered by image number and then split into separate groups if discontinuities in image position or slice location are found. Exams that are to be ordered this way are identified by ProcedureCode in the Centricity Workstation properties file.

Chapter 14. Language Support

14.1. Language Support Overview

Centricity™ Workstation supports the following languages:

- English
- Spanish
- French
- Danish
- German
- Portuguese
- Italian
- Japanese
- Chinese, Simplified and Traditional
- Korean

In addition, the Centricity™ Workstation supports the following keyboard localization (keyboard layouts):

- English (US)
- English (UK)
- Spanish
- French
- French Canadian
- Danish
- German
- Portuguese
- Italian
- Swedish
- Japanese
- Chinese, Simplified and Traditional
- Korean

In addition, dates are displayed on the Workstation in the local format, with the exception of the Worklists and Image Information window, which displays the DICOM-specified format.

14.1.1. Commonly Used Abbreviations

CJK	Chinese / Japanese / Korean
CJK-CS	Chinese / Japanese / Korean Character Sets

ISO	International Standard Organization
ISO-8859-1	An international character set, including all ASCII characters, as well as a set of extended characters used in most Western European countries
JIS	Japanese Industrial Standard, the Japanese national standard organization
GB	Chinese National Standard (pronounced in Chinese Guo (Nation) Biao (Standard)
MB	Multi-byte
SB	Single-byte
RCS	Report Class Specification. A class structure specification used in the PACS system to encode the diagnostic report text.

14.2. CJK Languages and Character Sets

Traditionally, each text character is represented with on byte of data, which provides 256 maximum possible coding points. These coding points are more than sufficient for English, which uses only 26 letters with lower and upper cases and additional non-language symbols. The English character set, called ASCII, uses 128 coding points and, therefore, needs seven of the eight bits in one byte of information.

European languages extend the ASCII character set by adding additional letters, while remaining within the 128 coding points window.

The ISO-8859 standard defines a number of 8-bit character sets. The ISO-8859-1 standard covers all Western European languages, while the rest of the standard is devoted to other languages such as Eastern European, Southern European, etc. A character set is also called a code page because multiple code pages share the same coding space, any text can only be interpreted when its character set is known. However, all ISO-8859 character sets reserve the same coding space for the ASCII character set. Therefore, all ISO-8859 character sets are compatible with the ASCII set.

The CJK languages add complexity to the character sets because of the extremely large character sets needed, far exceeding the information-encoding capacity of on byte. Usually, multi-byte (MB) coding techniques are needed to represent the CJK languages. Some techniques use fixed-length MB coding and others use varies-length single-byte/multi-byte coding. These encoding standards are nation-specific, such as GB and JIS.

The most successful method of creating a code page that includes all European and Asian languages is the Unicode standard, which uses a large code page covering all character sets of known languages an is internationally standardized. There are two encoding methods in the Unicode standard:

UCS-2	UCS-2 takes the Unicode scalar code value directly as the encoding value and encodes each Unicode characters as a two-byte word. The UCS-2 encoding is also referred to as wide-character encoding.

UTF-8	UTF-8 stands for UCS Transformation Format and encodes the Unicode characters with a varied-length byte stream

The Centricity™ Workstation and the PACS system use the UTF-8 encoding method.

14.3. Multiple Writing Systems in CJK

In CJK languages, multiple writing systems are used. The following table shows these systems:

Language	**Writing System**
Chinese	Latin, Hanzi, Zhuyin
Japanese	Latin, Hiragana, Katakana, Kanji
Korean	Latin, Hangul, Hanji

The PACS system is impacted by the multiple writing systems because the name of the one person can be written in several forms, depending on which writing system is used. The following table lists all possible person names and their encoding forms in the CJK languages.

Language	**SB Code**	**SB Code**	**MB (Ideograph)**	**MB (Phonetic)**
Chinese - simplified and traditional	Latin	–	Hanzi	Zhuyin
Japanese	Latin	Katakana	Kanji	Hiragana
Korean	Latin	–	Hanja	Hangul

14.4. Support of Multiple Names

For languages that use ideographic (CJK languages), the DICOM standard allows up to three name representations: ASCII, Ideographic and Phonetic.

The Patient and Referring Service Physician fields are always shown in alphabetic format. It is important to note that these names are stored in the database in the alphabetic format. This format is also used in exam profiling and any sorting functions.

In addition, the Patient and Referring Physician fields are shown in Ideograph and Phonetic formats, in additional fields. If no Ideograph or Phonetic formats are generated, these fields show null values. These values are mapped to the alphabetic version, allowing database consistency after updates and edits.

However, the Ideograph and Phonetic version are not used in exam profiling. After successful exam profiling using the alphabetic name, the ideograph and phonetic names are updated, if these names were available in the received image, and if these name fields are empty in the IMS database.

The Ideograph and Phonetic versions will show the names in the following format:

[Last Name] [Separator] [First Name]

The separator will be a blank space.

You are able to display the multiple names in one of the following formats (listed in descending order):

- Alphabetic Name / Ideograph Name
- Alphabetic Name / Phonetic Name
- Alphabetic Name

14.5. Report Text Support

The Centricity™ Workstation supports the use of CJK text in the diagnostic reports for display, edit and print and communications with the RIS. The report test is saved in a data structure Report Class Specification (RCS). Both UTF-8 and ISO-8859-1 formats are supported by this RCS.

All report display areas are able to display CJK characters. If some text information cannot be displayed (missing required typeface libraries, encoding format conversion failure, etc.), the Workstation displays a symbol indicating this failure.

The following CJK text input is supported:

- Japanese (including Katakana, Hiragana and Kanji)
- Simplified Chinese
- Traditional Chinese
- Korean (including Hangul, Jamo and Hanji)

14.6. DICOM Header Support

The Centricity™ Workstation supports the DICOM standard character set extension when retrieving information from the image header for display. The multiple names used in the DICOM header are shown in the image header information.

Chapter 15. Workstation Messages

15.1. Workstation Messages

The messages shown below can be configured to appear or not appear. If you wish to switch these messages, you must contact GE field support so that a field engineer can make the change.

Key in the Properties File	Message Text
saveMessage1	Save this patient’s exams before closing?
genericLockFailure	This exam may be opened by other users. Any changes you make may be overwritten.
multiplUsersReadingExam	The following users are also reading this exam.
sortAlertMessage1	Sorting this worklist may take a long time.
showHideNumberof CopiesWarniing	Do you really want to print xx copies.
exitMacroWithExqamStillOpen	By switching to the Patient Info View you have exited macro mode. You may re-enter the macro mode by closing the exam you were last viewing.
exitMacroWithNoExamOpen	By switching to the Patient Info View you have exited macro mode.
quitMessage	Do you really want to quit?
showNoSelectionDialog	Please select an image in the active display region.

Chapter 16. Keyboard Shortcuts

16.1. Keyboard Shortcuts

Keyboard shortcuts let you execute commands from the keyboard instead of using the mouse. These shortcuts can be especially helpful when you do not want to move the mouse pointer from an image, or when it would be faster to press the keys.

16.1.1. Standard Shortcuts

The shortcuts listed in the following table work with all exams, regardless of modality.

Hot Key Combination	Action
Alt - A	Select all images in all active exams
Alt - D	Display images
Alt - F	Display Layout Manager
Alt - I	Show/Hide Image Overlays
Alt - L	Review Macro / Skip current exam in Dictation and Verification macros
Alt - N	Dictation macro
Alt - O	Open Folder Browser
Alt - P	Print images
Alt - Q	Quit application
Alt - R	Open Report palette (from Image View Area)
Alt - S	Save current exam
Alt - T	Verification macro
Alt - U	Deselect all images in all active exams
Alt - W	Close current and comparison exams in the Image View Area

Alt - Y	Show/Hide user-generated ROI/annotations
Alt - #	Apply defined color table to image
Alt - +	Magnify image 2x
Alt - -	Reduce image 2x
Alt - ;	Invert grayscale
Alt - /	Reset zoom to 1x
Alt - 0 - 9	Apply window / level preset 0 - 9 (see modality tables)
Ctrl - O	Toggles the Order palette opened and closed
Ctrl - P	Toggles the Patient Jacket palette opened and closed
Ctrl - R	Toggles the Report palette opened and closed
Ctrl - U	Toggles the Utilities palette opened and closed
Ctrl - W	Toggles the Work Modes palette opened and closed
Ctrl - Left Arrow	Shifts the position of the active palette one monitor to the left
Ctrl - Right Arrow	Shifts the position of the active palette one monitor to the right
Ctrl - Up Arrow	Shifts the active palette up by one increment
Ctrl - Down Arrow	Shifts the active palette down by one increment
Ctrl + Page Up	Shifts the active palette up by the current height of the palette
Ctrl + Page Down	Shifts the active palette down by the current height of the palette
Number Keypad	Numbers 0 - 9 mapped to Alt - 0 - 9 respectively
F2	Start dictation (send accession number)
F6	Mark dictated
F7	Toggles the selected Workstation palettes (Work Modes, Patient Jacket and Report) opened and closed
F8	Shows all the Workstation palettes
F10	Hides all the Workstation palettes
F11	Approve and forward the exam
F12	Approve and complete the exam

Ctrl - Alt - S	Save current and comparison exams
Ctrl and	Select multiple images (not in a range)
Shift and	Select multiple images in a range
Shift and	Activates fast scrolling through manual cine
Space bar and	Marks an image as a significant image, or if an image was a significant image, removes the significant image marker
Alt-	Changes Window/Level settings of magic glass image
Shift and	Changes the magnification ration
Ctrl-Alt -	Invert grayscale of magic glass ratio
Shift -	Constrain the shape to a square
Shift -	Constrains the shape to a circle
End	Moves to the end of the exam series or worklist
Alt - Any Tool	Changes the tool's function temporarily to Window / Level.
Shift - Any Tool	Tool function propagates to all images in current series
Ctrl - Any Tool	Tool function propagates to all selected images in the active exam
Ctrl - Shift - Any Tool	Tool function propagates to all images in all displayed exams for the current patient
Left Arrow	Displays the previous single image in a series
Home	Moves to the beginning of the exam series or worklist
Middle Mouse Button	Performs action of standard tool allocated to middle mouse button position
Page Down	Displays the next page of the series
Page Up	Displays the previous page of the series
Right Arrow	Displays the next single image in a series

16.2. Modality Shortcuts

The shortcuts listed in the following table are specific to exams for each modality type. when you apply the shortcut, you are applying the ideal window leveling for that body part or function. You will be able to use these shortcuts while in the Image View Area.

Hot Keys	CR/DX/MG	CT	MR	NM	RF/US/XA
Alt - 1	Abdomen	Chest/Abdomen	Gradient Echo T2	GE Color	Body Part 1
Alt - 2	Chest	Lung Window	T1	MID4 Mono	Body Part 2
Alt - 3	Skull	Liver Window	T2	MID8 Mono	Body Part 3
Alt - 4	Cervical Spine	Bone Window	PD	Hot Iron	Body Part 4
Alt - 5	Shoulder	Brain/Sinus	MPreset 5	Tomo Mono	Body Part 5
Alt - 6	Knee/Ankle	Cervical Spine	MPreset 6	Page Phase	Body Part 6
Alt - 7	CT Lumbar Spine	CT Lumbar Spine	CT Lumbar Spine	Page Color	CT Lumbar Spine
Alt - 8	Extremity	Extremity	Extremity	Low 20 Mono	Extremity
Alt - 9	Foot	Foot	Foot	Low 24 Mono	Foot
Alt - 0	Femur	Femur	Femur	Low 28 Mono	Femur

Chapter 17. Glossary

Action Tool

A tool that will affect all selected images without additional user interaction.

Active Exam

The exam displayed in the active window.

Active Window

The window whose title bar is highlighted.

Cine View

A viewing mode in the Centricity™ Diagnostic View application that allows you to view images in a movie-like sequence.

CJK

Chinese, Japanese and Korean languages and character sets.

Clinical Workstation

A computer that enables you to display, change, and store images. A clinical workstation is not used for primary diagnosis.

Cobb Angle

The acute angle between two lines, created using the measure distance tool.

CR

Computed Radiography. Radiography that records images on plates which are then converted to digital form by a plate reader.

Cross Referencing

Depicting the location of an image slice in a related series.

CT

Computed Tomography.

DDP

default display protocol

Default Display Protocol

Automatically displays a newly opened exam according to a preset display protocol.

Diagnostic Review Workstation

A computer that enables you to view, change, and store patient images. A Diagnostic Workstation can be used for diagnoses.

DICOM

Digital Imaging Communications in Medicine is a standard that is a framework for medical imaging communication.

Digitize

To scan a radiographic image with a laser that records the image in digital form (in pixels) that can be stored in a computer and later retrieved for viewing.

Display Protocol

Manages the display format for opened exams and historical exams.

DPS

DICOM Print Server.

Gray Scale

Shades of gray on the screen that are created by varying the intensity of the screen's pixels.

Hot Zone

A button which immediately displays a drop-down menu when the mouse pointer is placed over it.

Image Format

The number of image display regions displayed within a series display region.

Image Series

A collection of images for a patient that were acquired using the same procedure.

Implicit Selection

When state tools are chosen, they may be used to manipulate images which have not been selected by the user. The manipulations performed on these images do not propagate to any selected images. Tools that have this implicit selection capability include the Window/Level, Magic Glass, Window/Level Magnified Region, Pan, and Zoom tools.

Invert Gray Scale

To change bright pixels of an image to dark and dark pixels to bright while maintaining the inter-pixel brightness relationship.

Linking

Connecting multiple image series so their movements mirror one another.

Monitor Format

The number of series regions per monitor.

Multi-Monitor Sheet

A series display region which spans across more than one monitor.

Network

A collection of interconnected, individually controlled computers, together with the hardware and software used to connect them. A network allows users to share data and peripheral devices and to exchange electronic mail.

Off-Line

Not currently connected to or under the control of the computer.

On-Line

Currently connected to and under the control of the computer.

Primary Monitor

The monitor that the main PathSpeed™ application will be displayed on. For a system with one monitor, that monitor will be the primary monitor. For a system with two monitors, the left monitor will be the primary monitor. For a system with four monitors, the second from the left monitor will be the primary monitor. The Patient Info view, exam drop-down list and workflow tabs will only be displayed on the primary monitor.

Region of Interest

A user drawn oval, polygon or rectangle for viewing statistical information of the enclosed area.

Series

The images from an exam may be broken down into “Series”. A series may consist of multiple image groups (e.g.: one series with multiple echo times may be broken into image groups by echo time). Series can also contain only a single image group.

Series Display Region

An area of the monitor display which may show a unique series. Each series display region has its own title bar.

Sheet Mode

The images from an exam are displayed next to one another as if on a single sheet of paper. Also known as "Tile Mode".

Significant Image

Individual images identified by the user as having some importance. Significant images are labeled as "SI."

Stack Mode

The images from an exam are displayed one at a time as if stacked in an orderly pile.

State Tool

A tool that when selected, requires further user interaction to manipulate the selected images.

Teleradiology

Technology by which digitized medical diagnostic images and related information are transmitted from one location to another. Also referred to as “Telerad”.

Title Bar

(1)The horizontal bar at the top of a window that shows the name of the window’s contents. (2)The horizontal bar at the top of a series display region which contains exam information.

Tool Palette

A collection of tool buttons that let you change the way an image appears on the screen. Appears in the view tab only.

Window/Level Adjustment

Changing the contrast and brightness of an image.

Worklist

A listing of exams from which you can select. The Worklist Browser enables you to choose the list you want to display.

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