Important

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Key to note icons

- A note offering additional information on an aspect described in the text.
- An aspect of particular importance to take note of.
- A tip or trick to help you get more out of Centricity Web.

Read this.
In This Chapter

Introducing Centricity Web

This chapter offers a very brief introduction to and the philosophy behind it. It covers the general way you can use it to access and examine medical images from just about anywhere. And, with the built-in conferencing features, how you can discuss studies with colleagues who may be on the other side of the world almost as easily as if they were in the same room.

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Centricity Web is a web-based system for examining medical images over an intranet or the Internet. A Centricity Web Server retrieves images from archives and other sources and provides them to the Centricity Web client in much the same way as a site on the Internet.

Running inside the Internet Explorer browser, Centricity Web lets you find, display and manipulate virtually any medical image or patient study that may consist of an individual image or a series of digital images.

With Centricity Web you can view CT, SC, MR, X-ray, Digital X-ray (DX), Digital Mammography X-ray (MG), Digital Intra-oral X-ray (IO), XA, XF, NM, RF, PET, Ultrasound, CR, and many other types of images, from monochrome through to 24-bit true color. You can also view presentation states (a standardized way of storing annotations) and key note objects or key images, a standardized way to tag images for different purposes such as significant images.

The versatility of Centricity Web means that computerized diagnostic imaging can be used at any location inside or outside the hospital - even at home. The conferencing features in Centricity Web allow doctors and specialists to seek second opinions and collaborate on and review patient studies, regardless of where each of them might be.
Ease of use

Centricity Web is designed to combine powerful functionality with ease of use for everyone, even those without extensive experience of using a computer. Many of the features of Centricity Web can be found on ‘tooltabs’. These group together and provide rapid access to functions in specific areas such as windowing, measurement and conferencing. A little time spent becoming familiar with the use of these will pay dividends in terms of your speed and efficiency.

There are also ‘toolbars’ available while viewing images, that provide buttons with one-click access to many commonly used functions. These are configurable and can modality-dependent.

Dragging with the left mouse button moves an image. Dragging with the right mouse button performs such functions as windowing images, while a single click with this button reveals a shortcut menu with all kinds of options for commonly performed tasks. You can use the mouse wheel to zoom images and to control cines.

You can show or hide particular parts of the screen, such as the Pictorial Index and reports window, and position the tooltabs on the left or right side of the screen. Centricity Web will remember these and other preferences.
The Data Selector

The Data Selector appears when you start Centricity Web. It shows a configurable list of studies. You can run queries and filters on the list, narrowing your selection so you can quickly pinpoint the images you want to view. It lets you see the status of individual studies or import images from remote storage devices. You can double click a study to open it for viewing, or select individual images to view in order to minimize download time.

The Data Selector also lets you view study reports, retrieved from the Centricity Web Server or from an external RIS (Radiology Information System) application.
The Pictorial Index

To help you locate exactly what you want to view, and to make a selection of images to view, the Pictorial Index is shown in the Data Selector. When you select a study, it displays thumbnails of all the images in the study so you can gain a good idea of what a study contains before downloading any actual images from the server. You can reposition the Pictorial Index at either side of the screen and show or hide it at will.
The Viewing Section

When you open a study or a selection of images for viewing in the Data Selector, these images are shown in the Viewing Section of Centricity Web. ‘Viewports’ contain the images in the center of the screen while the Pictorial Index remains, but now becomes a valuable navigation tool for helping you find your way around studies and select the images you want to appear in the viewports.

You can display a single viewport, or a whole array of them of various sizes. All kinds of layouts for your viewports are possible. You can also select alternative viewport arrangements for particular tasks such as study or series compare.

The Viewing Section provides powerful tools for viewing and diagnosis. In it, you can window images, zoom in on them for a closer look, use a magnifying glass and flip or rotate your images.

Cine loops are a valuable diagnostic tool. Centricity Web allows you to run a cine which you can start with a single click of the mouse.

Centricity Web also provides various kinds of measurement facilities, such as probes, distances, profiles and regions of interests (ROIs).

Yet another valuable feature of the Viewing Section is the ability to pin (‘freeze’) an image in a viewport – very useful when comparing images and series. You can also request to view only those images that have been previously designated as of particular clinical interest (key images or key notes).

As in the Data Selector, you can view reports while examining your images.

You click the Worklist button to return to the Data Selector.
Conferencing and collaboration

Centricity Web’s conferencing facilities, if configured on your system, allow you to consult colleagues almost as if you are in front of the same computer looking at the same images using Centricity Web. Even though you may be miles - even continents - apart, the Centricity Web allows you and your colleague to work in sync so that you both view the same images and can see the other’s mouse cursor. When you or your colleague make a change, window or pan an image for example, the other Centricity Web updates in just the same way. A text chat facility allows you to type in messages to each other. If your computers are fitted with webcams and microphones, you can even see and talk to each other.
Getting started

This chapter introduces some of Centricity Web's main parts and the typical activities you might undertake with Centricity Web. By spending just a few minutes going through the procedures, you will have a quick introduction to the key features of Centricity Web and will gain an idea of how you might use it in your particular line of work.

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The ‘guided tour’ in this chapter is intended only as a brief introduction to what Centricity Web is capable of. You will find fuller descriptions of what you can do with Centricity Web in the remainder of this guide.

Tracking down studies and images in the Data Selector

When you start Centricity Web, the Data Selector appears and displays a worklist. This is a list containing studies or patient studies. You can use queries to display the studies or patient studies you want to view.

1. Log in to Centricity Web. The Data Selector will appear displaying a list of patients or studies.

2. Select from the Worklist drop-down list the worklist whose studies you want to view in the Data Selector.

3. To ensure that you have a reasonable number of studies in the worklist, perform a query by clicking on the binoculars icon ( ). In the Query Parameters dialog box, type in part of patient’s name and a wildcard (e.g., B*) in the Patient Name edit box. (Enter ‘B%’ or just ‘B’ if you are using a Centricity PACS database.) This will search for and display all studies or patient studies beginning with the letter ‘B’.

4. In the Data Selector, the headers at the top of each column (e.g., Pat. name) allow you to sort the information in the columns. An arrow pointing upwards indicates that the column is sorted in ascending order; e.g., from A - Z. An arrow pointing downwards indicates that the information is sorted in descending order. Click on the Pat. Name header and see how the list rearranges itself. Then click on some of the other column headers to see the effect it has on the worklist.

5. The first column in the list consists of arrows ( ). Click on one of these. This tells the Centricity Web server to find out more on the particular study. Note that the arrow points downwards and displays against a red circular background ( ). Click on the arrow again to close up the extra information displayed in the list.
6 If you are viewing a study list, you will see a modality list with checkboxes at the lower-left side of the screen. For each modality represented in a study list, Centricity Web adds a check box to the modality list. If the database you are accessing only contains studies from one modality, you will only see a single check box. Typically, however, you will see a number of check boxes. Check and uncheck these to see what effect it has on your list. This is an example of filtering. Only studies from the modalities whose check boxes are checked are shown. The All (✓) and None (□) buttons provide a quicker way of displaying particular modalities. For example, click the None button and then one of the check boxes to show studies from just this one modality.

7 If you are viewing a patient list, you will see at the lower-left side of the screen checkboxes that allow you to filter by sex. Check and uncheck the check boxes to view just patient studies of males, females or males and females. Here, too, the All (✓) and None (□) buttons provide a quicker way of filtering.

8 Beneath the worklist in the Data Selector appear some buttons with which you can view reports. Click on a row in the Data Selector and then on the relevant button to view a report. The Local report button, for example, displays reports stored in the local database. The HIS/RIS report button will display reports made on hospital or radiology information systems. Other buttons may also appear, depending on the databases configured on your system.

9 On the far left or right of the screen, you will probably see a large gray rectangle. This is the Pictorial Index, which is a powerful tool for previewing studies and selecting particular images to view. If you cannot see the Pictorial Index, click the button with the ‘plus’ icon to make it visible. When you first enter the Data Selector, the Pictorial Index will be empty. If you are viewing a study list, click once with the mouse on one of the rows in your study list. After a few moments, the Pictorial Index will fill with miniature images of all the images in the study you just clicked on. If you are viewing a patient list, you will first have to click on a patient icon (윤) first and then on a study for the same effect.

10 Click an image in the Pictorial Index. Centricity Web will highlight the image to indicate that you have selected it. Hold down the Ctrl button on your keyboard and then left click on one or more additional images to select multiple images.
To select a range of images, hold down the Shift key on your keyboard and click on the first and the last images you want in your selection.

Below the Pictorial Index you will see a button with a key icon ( ). You will be able to click this if the study has previously had images of particular clinical interest marked as key images. To the right of the key icon, you will also see a Compression drop-down list. This lets you select the compression which Centricity Web should use to send you images you request for viewing. JPEG Low, for example, means that images are quite heavily compressed, so they will be transferred over the Internet or your network faster, which may be important if you do not have a fast connection. Some image detail, however, will be lost and may make images unsuitable for diagnostic purposes. No compression means that the images are not compressed and will take longer to arrive. You would typically use this on a relatively fast intranet where data transfer speed is not really an issue.

With a few images selected in the Pictorial Index, click the View Selection button. You will now leave the Data Selector and the Centricity Web Server will send the images you selected. You will enter the Viewing Section, where the images you requested will be displayed. Before exploring the Viewing Section, however, click the Worklist button in the lower right of the screen to return to the Data Selector.
Working in the Viewing Section

If you have gone through the introduction to the Data Selector, you will have already briefly visited the Viewing Section, the part of Centricity Web where you will probably spend most of your time. It is in many ways the heart of Centricity Web where you can view images in detail, analyze them and view reports.

1. Open the Data Selector if you are not in it already (if you are in the Viewing Section, click the Worklist button).

2. In the Data Selector, select a study for viewing that contains two or more series. To see how many series a particular study contains, click on the arrow ( ) in your list. In the additional information that appears, each series in a study is briefly described. Your Pictorial Index also reveals how many series a study contains - the images in each series are separated by a gray bar with the title ‘Series’. Once you have found a study with at least two series, double-click it in your study list.

The Viewing Section screen

1. Centricity Web will take you to the Viewing Section while the Centricity Web Server sends you the first images in the study. Depending on the type of study, a number of viewports will be shown in the center of the screen, each containing an image from the study. On one side of the screen you should see the Pictorial Index, with miniature views of all the images in the study you opened. If you cannot see the Pictorial Index, click the button with the ‘plus’ icon near the word ‘Pictorial’.

2. Above the viewports, you will see a row of buttons. This is the toolbar. The buttons shown can be configured, and can also be set to be dependent on the modality of the images you are viewing. To get a quick overview of the functions available in the toolbar, move the mouse pointer slowly over the buttons. Tooltips will provide a short description of each button.

3. Click the button in the margin with the sun icon. A tooltab will slide out (in this case the Windowing tooltab). Click the arrow in the upper corner of the tooltab to hide the tooltab (to provide maximum screen area for viewing images when you are not using the tooltab). Click some of the other tooltab buttons to have a quick look at what they contain.
Your tooltabs will also close if you click in any of your viewports. If you do not want this to happen, you can use the ‘Pin’ button ( ) at the top of the tooltab. Open a tooltab and click its Pin button. Now click in a viewport. The tooltab will stay in position. Click the Pin button again and then in a viewport. The tooltab will release and slide back. We will look in more detail at each tooltab and what you can do with it in a moment, but first let’s look at how to arrange the viewports and other parts of the Viewing Section.

Adjusting the Viewing Section screen and viewports

Depending on your system’s configuration, you can perform the following actions with the layout button on your toolbar:

1. Click the Layout button ( ) in the right margin. The Layout tooltab will slide out. In the Series areas section at the top, click the button with the horizontal line running through its center ( ). You will see that the viewport area is divided in two by a thicker horizontal line which indicates the division between series.

2. Click one of the viewports in the upper series area that contains an image, and then on the button in the Layout section on the tooltab which displays four squares ( ). The upper series area will now change to display four viewports containing the first four images of the first series in the study (unless it already contained four viewports).

3. Click one of the viewports in the lower series area that contains an image and then on the button in the Layout section on the tooltab which displays just a single square ( ). The lower series area will change to display just a single viewport. By using combinations of the layout buttons, you can create various layouts for your viewports to facilitate comparing series for example.

4. Double-click inside a viewport. This will then display across the whole screen except for the toolbar. Double-click the image again and Centricity Web will return to its former display.
Filling your viewports with images

After you have laid out your viewports, how do you fill them with the right images? The Pictorial Index provides the answer.

1. If you have followed the previous steps, you will notice that the first four images of the first series of the Pictorial Index are highlighted by red rectangles. These are the images currently being displayed in your upper series area. The first image of the second series in your study is also surrounded by a red rectangle. This is the image currently being displayed in the single viewport in your lower series area.

2. Click one of the images in the upper series area (this tells Centricity Web which area to change the images in) and then in another part of the first series in the Pictorial Index. The upper series area will fill with images from the image that you clicked in the Pictorial Index.

3. Click the image in the lower series area and then on a different thumbnail in the second series in your Pictorial Index. The image will be replaced by the new image you clicked. In this way, you can fill your viewport areas with exactly the images you want to view.

4. Centricity Web also lets you easily browse through your series to find images of particular interest. If your mouse has a wheel, click on one of the viewports and then hold down your mouse wheel, release it and turn the wheel to scroll slowly through your images with it. Click in the upper series area and then on the View next images ( ) and the View previous images ( ) buttons in the upper-left of the screen. Each time you click the View next images button, the upper series area will display (scroll to) the next four images in the series. Clicking the View previous images button will display the previous four images.

5. When Centricity Web has to display more than one series in the Pictorial Index, you can create more room for series of more interest by hiding others. To hide a series in the Pictorial Index, click the name of the series in the gray bars at the top of that series. To display the series again, click the gray bar with the series name.
Scope and pinning viewports

When adjusting your images, sometimes you will want to change just one particular image in a viewport. Other times you might want to change all the images in a series, or even a study, at the same time. You use Centricity Web’s Scope to do this. There will also be times when you want to ‘freeze’ an image (such as a scout image for example) in a viewport, so that you can change the images in the other viewports but have this image remain unchanged. You do this by pinning the viewport containing the image.

1. In the margin of the Viewing Section you will see a set of radio buttons each offering a particular option: Viewport, Study, Series, All. Click on the Viewport radio button.

2. Click with the mouse in the first viewport in the upper series area and, holding the left mouse button down, drag with the mouse across the viewport. The pointer will change to a hand symbol and the image in the viewport will move with the mouse pointer. You are now panning in your viewport. When you release the mouse button, note that only the image you dragged has moved. The images in the other viewports are not affected. This is because you set the Scope to Viewport.

3. Click the Series radio button and again drag with the mouse in the first viewport in the upper series area. When you stop moving the mouse button, the images in the other viewports in the upper series area will now also move to match the movement of the image in the viewport you dragged in. With the scope set to Series, actions such as panning and windowing that you perform will affect all the images in the same series.

4. Click the Study radio button and drag once more in the first viewport in the upper series area. When you stop moving the mouse button, all the other images - including the one in the lower series area - will move because you have set the Scope so that all the images in the entire study (hence both series) will be affected.

5. Now click one of your viewports and click the button in the toolbar with the thumb tack icon to pin the viewport. Try to change the image in the pinned viewport by clicking the Pictorial Index, dragging in other viewports etc. It will remain unchanged no matter what you do. Click the Pin button again to unpin the viewport.
Windowing your images

Windowing involves changing the lightness and darkness of images and is one of the most common tasks in digital medical imaging. Centricity Web has a tooltab specifically for this purpose. This lets you window in a variety of ways. You can also window quickly and easily using the right mouse button.

1. Right-click in one of your viewports and hold the mouse button down. After a moment, the cursor will change into a sun symbol. Now, keeping the mouse button pressed, drag the cursor to the left or right to adjust the center, and up and down to adjust width (or a combination of both).

2. Click the tooltab button in the margin with the sun icon to slide out the Windowing tooltab. Click in the area (field) below the word ‘Center’ and type in a value. Do the same in the field below ‘Width’. Press the Enter key on your keyboard to enter your changes and see how the images change in the viewports.

3. Drag the pointers on the scrollbars below the Center and Width fields to adjust center and width.

4. Click the small down arrow on the right side of the drop-down list immediately below the Invert button. This will display a list of windowing settings. Select one of these and see what effect it has on your viewports.

5. Click the button with the thumb tack ( ) icon at the top of the Windowing tooltab to keep it in view, then right-click in a viewport and drag with the mouse to window the image in the viewport. Then click the Add button on the tooltab. In the Add Window Level dialog box that appears, you can save the current window center and width settings for reuse with other images. You probably don’t want to do this just now, so click Cancel.

6. Click a viewport to select it. Then click the ROI (Region of Interest) button on the Windowing tooltab. A rectangle appears in the viewport you selected. To adjust the size of the ROI drag on its edges or corners. To reposition the ROI, click inside it and drag. Note how the windowing changes as you move the ROI around. Centricity Web optimizes windowing of the image for the area inside the ROI. When you have finished, right-click inside the ROI and select Delete from the menu that appears to remove the ROI, or simply drag the ROI outside the viewport.
7  Restore the original windowing settings by clicking the Reset button (with this \textbf{R} icon). This will return all your images in your viewports to how they were when you first opened the study.
Examining images in detail

Even on quite a small monitor, you can view images in great detail by zooming in. You can also flip images and rotate them. You do this with the Zoom and Flip/Rotate tooltab.

1. Click the button in the margin with the magnifying glass icon ( ) to slide out the Zoom and Flip/Rotate tooltab. Click the button with the thumb tack ( ) icon at the top of the tooltab to keep it in view.

2. Click the 1x, 2x, 4x and 8x radio buttons and drag the slider to see what effect this has on your viewports. Click with the left mouse button in a viewport and drag to pan zoomed images in the viewport. Note that the cursor turns into a hand icon when you do this.

3. If you have a center mouse button or a mouse wheel, hold this down over a viewport and move the mouse backwards and forwards to zoom in and out. Your mouse pointer will turn into a magnifying glass when you do this.

4. Try selecting the Relative and Absolute radio buttons in turn to see what effect these have. Relative means that, with a zoom factor of 1, Centricity Web will display the images so they just fit completely in the viewports. Absolute means that Centricity Web will (at a zoom factor of 1) show images so that one pixel on your display represents one pixel of the image that was actually acquired.

5. Click the Magnifying Glass button. Centricity Web will create a magnifying glass above your viewport area. Place your mouse within the magnifying glass and, holding the left mouse button down, drag it over your viewports. Drag the slider to increase or decrease the magnification. Resize the magnifying glass by grabbing any of its edges or on a corner and dragging in the desired direction.

6. You can use as many magnifying glasses as you like at the same time. Open another one by clicking on the Magnifying Glass button again. Two magnifying glasses can be very useful when comparing images.

7. You can window the area the magnifying glass covers. To do this, right-click on an area in the magnifying glass. Then drag the cursor up and down to adjust the center and width values. Alternatively, you can right-click within the perimeter of the magnifying glass and select the windowing setting you want to apply.
8 Close the magnifying glasses by clicking on the close button in the top right corner of the magnifying glasses.

9 Select the **Linear Interpolation** and the **Pixel Replication** radio buttons to adjust the quality of your images. Normally Centricity Web uses bilinear interpolation for zooming since it typically provides a smoother and more natural image. Pixel replication, however, renders more faithfully what was originally captured.

10 Click the buttons in the Flip/Rotate section of the tooltab and observe the effect in the viewports.

11 Click the Reset (R) button in the toolbar to restore your images to their initial condition.
Viewing cine loops

Cine loops are continuous displays of sequences of images in a viewport. They convey the effect of motion and can be a powerful diagnostic tool. They are very easy to set up and use in Centricity Web.

1. Click the button in the margin with this icon to slide out the Cine tab. Click the button with the thumb tack ( ) icon at the top of the tab to keep it in view.

2. Select the On radio button. Your active viewport will start to play a cine. This will show all the images in the series in turn.

3. To turn the cine off, click the viewport and then select the Off radio button on the Cine tab.

You can also run cines manually.

1. Select the Manual radio button on the Cine tab. Drag the slider at the foot of the tab to step through the images in the cine. Alternatively, you can drag with your mouse in the viewport or click in the viewport and use your mouse’s scroll wheel if it has one to step through the different images of a cine.

2. Turn the manual cine off by clicking in the viewport and then selecting the Off radio button.
Measuring images and displaying and hiding annotation

You can perform various measurements on your images. You can also specify what level of annotation you want to appear on the images in your viewports, as well as display or hide annotations that have been made to point out specific features.

1. Click the tool tab button with the ruler icon ( ) to bring the Measurement tool tab to the top.

2. Click in a viewport to select it and then click the Probe button (with this icon) on the tool tab. Centricity Web will place a crosshair on the image. The number next to the crosshair indicates the pixel value at that point. Click on and drag the probe across the viewport and note how the pixel value changes. Remove the probe by dragging it outside the viewport or by right-clicking on it and selecting Delete.

3. Click a viewport to select it and then click the Distance button (with this icon). Centricity Web will again place a crosshair on the image. Drag the crosshair to another part of the viewport and release the mouse button. Move the two ends of the line in turn by clicking and dragging on them. Move the whole line by clicking on its center and dragging. Remove the line by dragging it outside the viewport or by right-clicking and selecting Delete.

4. Click a viewport to select it, and then click the Angle button (with this icon). Experiment with dragging the points to create various angles in the viewport.

5. Try the None, Basic and Full radio buttons. These let you display none, some, or all of the patient study information provided with the images.

6. Finally, if image annotation has been included on the images in your study, selecting or clearing the Image Annotation check box will display or hide this information.
Conferencing

Centricity Web includes a conferencing option that allows you to consult with others while viewing the same images on your respective Centricity Web clients. The conferencing option allows you to manipulate images online as you discuss your case. You can quickly and easily send email containing hyperlinks to studies, making it easy to refer others to a particular study. During conferencing, you can use all the tooltabs you would normally use. If conferencing has been set up on your system, you will see a sixth tooltab button below the Layout tooltab button in the margin with this icon. If you cannot see this button, it has not been installed and you should skip the next steps.

1. Click the button in the margin with this icon to slide out the Conferencing tooltab.

2. Take a look at the Conferencing tooltab. Until you actually start a conference you will not be able to do very much with this. The top section lets you call another system to set up a meeting (the button with the telephone icon), start an image conference or a text chat (so you can type messages to each other). You can also use the tooltab to email study links to others. Conferencing is described in detail in chapter 5.
Viewing reports

You can view reports on the study you are currently viewing. The actual buttons you will see will depend on your installation. They are located at the bottom of your screen, underneath your study or patient list if you are in the Data Selector or below the viewports if you are viewing images.

1. Click one of your report buttons. A report that was written for the study will be displayed if available. Click the Close button (with this icon) or the report button again to hide it.
**Customizing Centricity Web**

Centricity Web is designed to give you the maximum possible area for viewing images, even if you are restricted by a relatively small monitor. This means you can very easily hide certain elements and only display them when you actually need them. The sliding tooltabs are an example of this, but you can also display and hide your Pictorial Index and reports. You can also set 'permanent' preferences that Centricity Web will remember the next time you use it.

1. Click the button to show the Pictorial Index if it is not visible or, if it is, the button to hide it.

2. Click the Reports ( ) button to show or hide your report window.

3. Click the Preferences button ( ). This lets you specify the types of toolbars you want to display, the position of the Pictorial Index when Centricity Web first starts up and whether you want a docked report or not. These are all 'permanent' options that Centricity Web will remember the next time you start it up.

The remainder of this guide covers all parts of Centricity Web in more detail, from performing queries and tracking down your images in the Data Selector (chapter 3) to examining your images in the Viewing Section (chapter 4). The powerful conferencing features are covered in chapter 5.
GETTING STARTED

chapter 2
When you connect to the Centricity Web Server, you will potentially have access to many thousands of studies, each probably containing many images and stored in any one of a number of databases. Centricity Web is intended to help you get to the exact images you want to view as quickly and easily as possible. This chapter details how you do this.
To find the images you want to view with Centricity Web, there are a number of steps you can take and actions to perform to narrow down your selection to precisely what you want to examine.

Initially, you can select a worklist. This is a list of studies or patients. To narrow your search further, you can then query your worklist. For example, you can type ‘A*’ (‘A%’ or just ‘A’ if you are using a Centricity PACS database) in the ‘Patient name’ field to select all names starting with ‘A’.

In your filtered worklist, click on a study to display the thumbnails of the study’s images in the Pictorial Index (or double-click a study to view all the images in it). If you only want to view particular images from a study, you can use the Pictorial Index to inspect the thumbnails of the images and select the ones you want the Centricity Web Server to retrieve and send to your Centricity Web client. This can significantly reduce download times if you are using a relatively low bandwidth connection such as the Internet.

Detailed information on all the features provided in Centricity Web to pinpoint studies and images is included in the rest of this chapter.

**Logging on to the Centricity Web Server**

For security reasons, you must log on to the Centricity Web Server before you can access it. If you are using Windows NT, 2000 or XP, this may be done automatically, depending on your Internet Explorer’s ‘Local intranet’ settings. If you are using a computer running Windows 98 or Millennium then, depending on the system settings, you may have to log in before you can access the Centricity Web Server. On a Centricity PACS system you always have to log in, independent of system settings. You will require a domain, user name and password, which your system administrator can give you.
Pinpointing studies and images in the Data Selector

When you start Centricity Web, it will open the Data Selector and display the last worklist you used. The Data Selector offers various ways of sorting and filtering the information in the list so that you can quickly pinpoint what you want to view.

Selecting a worklist
Select the worklist you want to query from the Worklist drop-down list.

The worklists available to you will depend on the configuration of the Centricity Web Server and the access rights that have been assigned to you. To find out more about your worklists, consult your system administrator.

There are two kinds of worklists: study lists and patient lists. Patient lists group all studies per patient.

The study list
The Data Selector provides detailed information on each study. Each study is represented by a row in the list. The columns provide specific information on each study, such as patient name, patient identification and referring physician. The actual information you see will depend on how Centricity Web was configured. You can expand the study item by clicking the Expand item icon ( ) to view the series within the study.

The patient list
The Data Selector provides detailed information on each patient. Each patient is represented by a row in the list. The columns provide specific information on each patient, such as patient name and patient identification, sex and date of birth. The actual information you see will depend on how Centricity Web was configured. You can expand the patient item by clicking the Expand item icon ( ) to view the studies for that patient.

The column headers and sorting your studies
The headers at the top of each column not only describe what information is contained in a column, they are also ‘buttons’ that allow you to sort your list according to the information in that column.
Your worklist will always be sorted according to one of the columns of information. The column used is indicated by a small up or down arrow next to the label at the top of the column (Patient Name for example). If an up arrow is shown, sorting will be in ascending order (from A to Z) according to Patient Name. When you click the header, the studies will be sorted in descending order (from Z to A) and the up arrow will turn into an down arrow to indicate this. Click again on the header and the order will reverse and the arrow will point up again.

You can sort the list on any of the information shown in it. You could, for example, click the Birth Date header and the arrow will move to the Birth Date header and the list will be sorted according to the patient’s date of birth.

The modality list and filtering your studies

Apart from sorting the studies in your worklist, you can also filter them according to modality. On one side of the Data Selector is a modality list, consisting of check boxes, one for each of the modalities represented in your study list. Select or clear a check box to display or hide the studies of that modality.

To quickly select all the check boxes (and so display all the studies in the list), click the All (✓) button. To quickly clear all the checkboxes (and hide all the studies in the list), click the None (☐) button.

In addition to clinical modalities (such as CT and MR), the modality list can contain checkboxes labeled PR (PResentation states), KO (Key note Objects) and SR (Structured Reports). These checkboxes will appear if any of the studies in the list contain any of these three types of additional information.

Presentation states contain image annotations and define window levels, zoom, pan, flip, and rotation settings, shutters and inverted window settings, see ‘Viewing presentation states’ on page 66 for more on these.

Key Note Objects identify key (significant) images, see ‘Viewing key images and key notes’ on page 59.

Structured Reports are reports (the ‘structured’ refers to the layout of the report), see ‘Viewing reports in the Viewing Section’ on page 89 for more on these.
Presentation states are stored as separate series, so you can either view the original images, or the manipulated/annotated version. When you open a study for viewing, its most recent presentation state is displayed by default. To open a different presentation state, expand the study item in your worklist by clicking the Expand item icon ( ) to view the series within it, and select from the series with the modality designation 'PR' (the presentation states saved with the study).

**Querying to pinpoint studies**

Filtering studies using the modality list is just one of the options you have for narrowing down your selection in your worklist. You can also use queries to quickly find studies you are looking for. You perform queries in Centricity Web either by typing in the fields underneath the headers in your worklist, or by clicking the Query button (with the binoculars icon) and entering your query in the dialog box that appears.

**To query using the study list edit boxes** in the edit box(es), enter the query details and press Enter on your keyboard, or click the Refresh button .

**To query using the Query dialog box** click the Query button (with this icon) to open the Query dialog box. Enter your query and click OK.

**About queries**

You perform a query to narrow down the number of studies/patients displayed in the Data Selector by clicking on the Query button (with the binoculars icon).

There are typically a number of items you can query on, such as Patient Name, Study ID and Birth Date, although your options will depend on your access rights and how the Centricity Web Server has been configured. If you know the Study ID of a study, for example, you should immediately be able to locate just the single study you are looking for. In other cases, however, the information you have may not be specific enough to precisely pinpoint the study you want.

The query will only show precise matches. This means that patient names, for example, must be entered exactly as included in the DICOM data when the study was created, otherwise they will not be found. So, querying on 'James Brown' may not yield any matches, but 'Brown, James' might (or vice versa). You should therefore have a good idea of how information has been included in the DICOM data for the worklist you are using. Using wildcards (see below) can often help if you are experiencing problems finding a patient.
Some fields allow you to specify queries between two dates (birth date and study date, for example). Type the first date in the first field and the second in the second field (use the date format of your Windows operating system - such as yyyy/mm/dd for the US).

You can also use these fields to retrieve yesterday’s or today’s studies by entering ‘yesterday’ or ‘today’ in them.

Applying multiple query criteria
You can enter information in multiple query fields. Only those studies that meet all the information you have entered will be displayed. For example, you could query for only those patients whose last name begins with A whose studies are dated within the last year.

Refreshing the information in the Data Selector
If you suspect the information shown in your worklist may have changed since you last performed a query (further studies have been added to the database for example), you can quickly update the worklist by clicking the Refresh button (with this icon).

Preset and suggested values and mandatory fields
You may see that one or more query fields have preset values that you cannot change. These will always form part of your query. You may also have fields in which values have been entered, but are only ‘suggestions’ - you can change them if you wish. You may even have mandatory fields, highlighted in a different color, where you must insert a valid value before performing your query.

These special fields are configured by the system administrator and are based on your access rights to the Centricity Web Server.
About wildcards

Wildcards are very useful when performing queries and you are not certain exactly how a patient name, for example, has been entered into the database. The wildcards you can use when querying depend on the type of database you are querying:

<table>
<thead>
<tr>
<th>Database</th>
<th>Type of data</th>
<th>Wildcards available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centricity RA 600</td>
<td>DICOM</td>
<td>*, ?, -, and \</td>
</tr>
<tr>
<td>Centricity DICOM Archive</td>
<td>DICOM</td>
<td>*, ?, -, and \</td>
</tr>
<tr>
<td>Centricity PACS</td>
<td>SQL</td>
<td>%, -, and \ (or nothing)</td>
</tr>
</tbody>
</table>

Wildcards you can employ for each of the databases used with Centricity Web

The asterisk (*) in a query means ‘any string of characters’. So, for example, if you know the patient’s surname but not their first name(s), you could perform a query like ‘Anderson*’. The Data Selector will then display all the patients studies with the surname Anderson (assuming the surname is in the database you are using). Similarly, the query ‘B*’ displays all the studies of patients’ names beginning with ‘B’.

For a Centricity PACS database, you should use the percentage character ‘%’ instead of ‘*’. For Centricity PACS, if you don’t use any wildcard at the end, the results will still show the same results as if one had been used. For example, ‘bro%’ would give the same results as just ‘bro’, and these results could include both ‘brown’ and ‘browning’.

The question mark character ‘?’ in a query means ‘any single character’. So if you are unsure of the spelling of a name, you could perform a query like ‘Anders?n’, which would display both ‘Anderson’ and ‘Andersen’. You cannot use the ‘?’ character with Centricity PACS databases.

The minus sign (-) is used in date ranges. For example, you could perform the query ‘12012001-12312001’ if you want to retrieve the information between December 1 and December 31, 2001.

Use the backslash character (\), as in ‘A\B’ for example, to retrieve ‘A’ or ‘B’ or both.
Blank queries

When you are performing a query and do not enter any information in the query fields, you perform a blank query. This should in theory display all the studies in the entire database. This is, however, unlikely to be what you want to do. Retrieving the information about a very large number of studies could take a long time, and you could end up with an extremely long list in the Data Selector.

In fact, to keep the load on the Centricity Web Server to a reasonable level, it will only display the first studies that match the query in the Data Selector. This depends on the way the server is configured. Displaying only the first 200 matches is typical. The actual number of records in the query result is displayed above your study list in the Data Selector.
The Pictorial Index

When viewing a worklist, the Pictorial Index should be shown on the left or right side of the screen (if it is not visible, see ‘Displaying and hiding the Pictorial Index’ on page 45). With the Pictorial Index you can see at a glance what images are in a study.

The Pictorial Index shows miniature images (‘thumbnails’) of all the images in the study or series you are viewing, automatically adjusting their size to fit the available space on the screen.

When a study is selected in your worklist, the Pictorial Index displays a study header which contains the name of the patient and the number of series in the study.

Beneath the study header is a series header. On the left of this is shown the series description if available, while the number of images in the series is shown on the right. Underneath, each image in the series is represented as a black square. On the right is a single black square that you can click to display a single image or the first image, a representative image and last image, or all the images in the series - see Expanding and collapsing the Pictorial Index for more on this.

Viewing multiple studies in the Pictorial Index

You are not restricted to viewing thumbnails of the images in a single study in your Pictorial Index. If you want to view thumbnails from more than one study, you simply select the studies you are interested in from your worklist.

To select multiple studies in your worklist, hold down the Ctrl key on your keyboard, and click the studies you are interested in. The Pictorial Index will now display all the images from all these studies. The different studies will be separated by their study headers.

Expanding and collapsing the Pictorial Index

Your Pictorial Index can become quite congested, particularly if it is displaying more than one series or study. If you wish, you can ‘collapse’ one or more study or series to provide extra room to view other images in the Pictorial Index.

To collapse a study, click on its header. To expand a study that has previously been collapsed, click on its study header again. Click on series headers to collapse or expand the series within your studies.
You can partially collapse a series by clicking on the small black box on the right of the series header.

Click once and only the first image in the series will be shown.

Click again on the small black box and the Pictorial Index will display thumbnails of the first, middle and last images of the series. (The gray boxes on the left of the series header represent images not visible in the Pictorial Index.) Click on the black box to the right yet again and the Pictorial Index will again display thumbnails of all the images in the series.

You can also right-click within a series in the Pictorial Index and select the appropriate command from the pop-up menu that appears: Show all images, One image only or First, middle, last image. If you select 1 image out of, you can choose more precisely how many images Centricity Web should display for the series.

### Sorting the images in the Pictorial Index

When Centricity Web first opens a series for viewing, it displays the images in the Pictorial Index in ascending order of the image numbers. You may, however, wish to view the images in the Pictorial Index in a different order - according to the order the images were received from the server, acquisition number or slice location perhaps. You can quickly sort series in this way.

**To sort series in the Pictorial Index** ➤ right-click in the Pictorial Index on the series you want to sort and select Sort Series and then the type of sorting you want from the pop-up menu.

It may be that the images are sorted according to the type of number you wish, but you want to display them in reverse order.

**To reverse the order of images in the Pictorial Index** ➤ right-click in the Pictorial Index on the series you want to reverse the order of and select Sort Series ➤ Reversed from the pop-up menu.

### Previewing images (enlarging thumbnails) in the Pictorial Index

The thumbnails in the Pictorial Index provide a broad overview of the contents of studies and series, but may not perhaps give you as much detail as you would like when deciding which images you would like to view.

You can, however, preview images by holding down the Shift key on your keyboard and right-clicking in the Pictorial Index. A window will open with an enlarged version of the thumbnail under the mouse cursor.
Displaying and hiding the Pictorial Index

You can hide your Pictorial Index when you are not using it to give yourself more viewing area for your worklists or for viewing image data. This is particularly useful when using a relatively small monitor.

To display or hide the Pictorial Index at the top of the Centricity Web window, click the Show or hide Pictorial button to display or to hide the Pictorial Index. Click the button again to toggle between displaying and hiding your Pictorial Index.

When your studies contain a lot of images, the thumbnails in the Pictorial Index may be very small. If you feel they are too small, you can ask your system administrator to configure your system so they appear bigger.

Positioning the Pictorial Index

You can place the Pictorial Index on the left or right of the browser window, or hide it.

To move the Pictorial Index to the left or right side of the browser window

1 In the upper-right corner of your browser window, click the Preferences button. The sliding tooltab opens.

2 Select Left or Right from the Pictorial drop-down list on the sliding tooltab.
Viewing additional study information

For any study in your study list, you can view additional information, particularly relating to the series it contains.

**To view additional study information** click the **Expand item** button ( ) in the first column in the study list for the study on which you want to view more information.

The study list will expand to show the additional information. This will typically consist of the study ID and then one row for each of the series contained in the study, with the modality, number of images in the series, and description if available. This is a good way of finding out more about the series contained within a particular study.

When additional information on a study is being shown, the Expand item button ( ) is replaced by a Collapse item button ( ).

**To hide the additional information** in the first column of your study list, click the **Collapse item** button ( ).
Viewing whether images are held locally

When viewing a study list in the Data Selector, the second column contains icons that indicate where the studies are stored. These icons tell you whether studies are stored locally, and this can be useful to know since studies that are stored remotely or are not available on-line (are not in the cache) in an image archive may take longer to retrieve and view.

The icons you may see are:

- The images in the study are available locally on the Centricity Web Server.
- The study is in long-term storage on the server. The study is in an image archive, but needs to be retrieved from the storage location before it can be sent to your Centricity Web client. The archive may take some time to retrieve the study (perhaps several minutes for a tape-based archive for example).
- The study is available on a remote server. The images are not available on the Centricity Web Server, and so cannot be sent to your Centricity Web client immediately. Before the Centricity Web Server can send the study, it has to import the study from the other system, which may take some time for a large study.
- Part of the study is in the cache of the server. The Centricity Web Server can send part of the study immediately to your Centricity Web client.
- Part of the study is in long-term storage on the server. Some of the study is in a archive but has to be retrieved from the storage location before it can be sent to your Centricity Web client.
- The study has been stored but not available. For example, the CD containing the study is not available because it is stored somewhere else.

Combinations of the above icons are also possible. This will be the case if the study is stored at different locations.
Opening complete studies for viewing

While you can use your Pictorial Index to select individual images to open for viewing (see ‘The Pictorial Index and selecting images to view’ on page 51), you can also use your worklist to quickly open complete studies for viewing.

To open a complete study for viewing

1. In your study list, double-click the study (if the study has already been selected, a single click is sufficient).

2. Before opening the study for viewing, you can adjust the compression (if any) the Centricity Web Server will use when sending the images to your Centricity Web client, see ‘Image compression and quality’ on page 53.

Opening multiple studies for viewing

When viewing a worklist in the Data Selector, you can also open multiple studies for viewing. To do this, you select multiple studies in your worklist.

To open a number of complete studies for viewing ▶ hold down the Ctrl key on your keyboard, click the studies you want to view then click one of the selected studies again.
Remote databases and importing studies

The Centricity Web Server will typically store the studies and images ready to be sent to your Centricity Web client for viewing. It may, however, also be connected to other image archives.

The Centricity Web Server can display the information on such studies (almost) as quickly as information on studies it holds itself, but it will not immediately be able to send the images to your Centricity Web client if you request them. Before it can do this, it will need to get them from wherever they are being held - in other words, it needs to import the study from the remote system to its local storage so the images it contains are available for sending to your Centricity Web client.

Remote studies, the Pictorial Index and downloading images

If a study is not held locally by the Centricity Web Server, it will not show the image thumbnails for this study in the Pictorial Index when you click the study in the study list. Before it can do this, it needs to retrieve the images from the remote database. Since downloading studies may take some time, Centricity Web does not automatically download studies to display the image thumbnails. Instead, when you click a study in the study list and that study is not available locally on the Centricity Web Server, the Pictorial Index remains blank and a Fetch Study button (see the table below) appears next to the Pictorial Index. Click this button so the Centricity Web Server imports the study and displays the image thumbnails in your Pictorial Index.

When the study has been imported by the Centricity Web Server, the study images are sent to your Centricity Web client.

If you have any questions about the privileges you have for downloading images, you can ask your system administrator.

The fetch button has a different name on different systems and in different situations.

<table>
<thead>
<tr>
<th>Button name</th>
<th>Database</th>
<th>Situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fetch</td>
<td>Centricity PACS</td>
<td>Downloads studies from Long Term Archive (LTA) to Short Term Storage (STS).</td>
</tr>
<tr>
<td>Import</td>
<td>Centricity RA 600</td>
<td>Downloads studies from remote storage to local storage.</td>
</tr>
<tr>
<td>Retrieve</td>
<td>Centricity DICOM Archive</td>
<td>Downloads studies from long term to cache storage or from offline to online.</td>
</tr>
</tbody>
</table>

The different button names, the databases they relate to and what Centricity Web Server will do
Download and view in one step

You do not have to explicitly tell the Centricity Web Server to download a study if you want it to open the full study for viewing.

If you double-click a remote study in your study list, the Centricity Web Server will automatically download the study and take you to the Viewing Section so you can view it. In other words, you view remote studies just as you would view studies held locally. You will, however, see a message stating that the Centricity Web Server is downloading the study. It will take a few moments for Centricity Web to display the study in the Viewing Section.
The Pictorial Index and selecting images to view

Besides opening whole studies for viewing, you can also just select individual images from a study and view these. The advantage of this may not be very significant if your client and the Centricity Web Server are connected by a relatively fast communications link - such as an intranet within a hospital. If, however, your connection to the Centricity Web Server is relatively slow - you are connecting over the Internet using a modem for example - it can greatly speed things up since the Centricity Web Server will only need to send the images you have specifically selected to your Centricity Web client.

You select individual images to view using the Pictorial Index while viewing your worklist.

To select individual images from a study to view

1. Click the study you want to view images from in your worklist.
2. Hold down the Ctrl key on your keyboard and click the images in your Pictorial Index you want to view.
3. Click the View Selection button below the Pictorial Index.

You can create any kind of selection from your Pictorial Index, even from different series within the study.

To select a range of images to view: hold down the Shift key on your keyboard and click the first then the last image in the range you want to view.

To remove an image from your selection: hold down the Ctrl key on your keyboard and click the image you want to remove from the selection.

Showing only key images (key notes)

A study you want to view may have had certain images marked as images of particular clinical interest, or key images. These are also known as key notes or key note objects. If this is the case, you can decide to have the Pictorial Index only show thumbnails of these images by clicking the Key images only button below the Pictorial Index.

If no images have been marked as key images for the study concerned, the Key images only button will be disabled.
Opening presentation states

If a study contains presentation states, you can select these in the Data Selector by expanding the study to series level. Presentation states are indicated by ‘PR’ in the modality column. If you open such a series, you will enter the Viewing Section with this particular presentation state applied rather than the most recent one from the study. The Pictorial Index will show the images referenced by that particular presentation state. See ‘Viewing presentation states’ on page 66 for more on this.
Medical images and studies can be large in size and it can take a significant time for the Centricity Web Server to send them to your Centricity Web client if you are connecting to it over a relatively low bandwidth connection such as a modem and the Internet. You can, however, decide to let Centricity Web Server send the compressed images - the files are compressed by the Centricity Web Server and then decompressed by your Centricity Web client so you can view them.

Sending compressed images can greatly reduce the time you need to wait before you can view images, but some image quality is lost in the process. Generally, the higher the compression the greater the loss in image quality. There is therefore a trade-off between compression level (and therefore the time you have to wait to view images) and image quality.

If you are connecting to a Centricity Web Server via a high-bandwidth hospital intranet, compression may not be necessary or desirable. In other circumstances, you can choose to select a higher or lesser degree of compression to improve your viewing experience.

Use the drop-down menu below the Pictorial Index to select the compression method the Centricity Web Server uses to send your Centricity Web images.

- JPEG compression achieves better results if you have images with a significant level of noise. It is always lossy.
- Progressive Wavelet compression is based on Wavelet technology but compresses the image even more, reducing the time it takes to send the image. It is lossy during downloading, but lossless when images have been completely downloaded.
- No compression means that the images are sent as they are stored. The images could be stored in a compressed or non-compressed form.

The options displayed in the Quality drop-down menu will depend on how the Centricity Web Server has been set up and on particular preferences and procedures within a hospital. If in doubt concerning the best type of compression to use, consult your system administrator.
Viewing reports in the Data Selector

Often the studies you view will have already been examined and reported on. If you have access rights for reading reports, you can view any reports associated with a study while in the Data Selector and the Viewing Section.

To view a report on the study currently selected in your study list ► click one of the buttons at the bottom of the window; e.g., Local report or HIS/RIS report. The actual buttons you see are configured separately for each Centricity Web Server.

Docked and floating report windows
If a report is available for the study you have selected in your study list, this will be shown in a ‘docked’ report window that appears below your study list.

To view reports in a docked window ► in the upper-right corner of the browser window, click the Set Preferences button ( ). In the list of options that appears, select the Docked Report check box.

To view reports in a floating window ► click the Set Preferences button and make sure the Docked Report check box has not been checked.

Centricity Web will remember the setting, so it will continue to display reports in the type of window you choose.

Displaying or hiding your reports window
You may wish to hide the window temporarily to give yourself the maximum screen area for viewing your study list.

To hide or show your reports window ► click the Show or hide report button ( ) in the upper-right corner of the browser window, to change between displaying and hiding your report window. To hide the report, you can also click the Close button at the top of the Report.

Alternatively, you can click the report button at the bottom of the window to show and hide your report window.

Viewing structured reports
Centricity Web allows you to view DICOM structured reports. Treated as separate items from the images with which they are associated, these can be sent on their own over the network so you can view them without needing to receive and send the images as well. This can greatly reduce network traffic.
When you are viewing a worklist, any structured reports associated with a study are included at series level and appear as series with the modality SR.

**To view structured reports while viewing a worklist** click the *Expand item* button (/forms/Expand) in the first column in the worklist for the study that has the structured report associated with it. Look for the ‘series’ with modality SR and click it.

**Viewing reports with right to left text**

If your operating system is configured for text flowing from right to left, a button is displayed when viewing reports that allows you to switch between displaying the report text from right-to-left and left-to-right.
When you have tracked down the studies and images you want to view using the Data Selector and tell Centricity Web that you want to open them for viewing, they appear in the Viewing Section of Centricity Web. This lets you create your own layouts for your images, window them, zoom in, run cines, make measurements and more. All the tools that you need to perform detailed examinations of your studies are included in the Viewing Section.
The Viewing Section of Centricity Web opens automatically when you double-click a study in the Data Selector, or when you make a selection of images in the Pictorial Index and click the View Selection button. You use it to manipulate and view studies for comparison and diagnosis. In many respects the Viewing Section is the heart of Centricity Web where you will probably spend most of your time.

Introducing the Viewing Section and the Pictorial Index

When the Viewing Section opens to display the images you want to view, the Pictorial Index on one side of the screen shows you miniature views of all these images. In the center of the screen are the viewports, each of which shows you one of the images. In the margin on the other side of the screen from the Pictorial Index, you will see a set of buttons containing various icons. When you click these, tooltabs for manipulating and analyzing the images in the viewports will slide out for you to use. Below the tooltab buttons is the Scope which lets you limit what you do (such as windowing) to just a single viewport, a whole series, or have it apply to an entire study.

You can use the Reset button ( ) to return all the images in the viewports to their condition when they were originally opened. This will reverse any changes (such as zooming or windowing) you may have made to them. Click the Worklist button in the lower-right of the screen to return you to the Data Selector.

As in the Data Selector, you can view reports on your studies while you are examining them. You use the buttons below your viewports for this.

The Pictorial Index in the Viewing Section

The Pictorial Index in the Viewing Section of Centricity Web functions just like the one in the Data Selector. There is one small difference: in the Viewing Section, any image currently being shown in the viewport area has a red box around it in the Pictorial Index. You can quickly move to exactly the images you want to view in your viewports by clicking on a thumbnail in the Pictorial Index. The viewports will now fill with images starting from the thumbnail you clicked. For the other functions of the Pictorial Index, see ‘The Pictorial Index’ on page 43.
Viewing key images and key notes

Out of the many images in a study there are often just a few which contain the key diagnostic information the physician needs. If key images have been identified in the study, you can decide to view just these key images or the whole study.

To view just the key images in a study ► click the ‘Key images only’ button below the Pictorial Index.

Similarly, you can view all the images in a study rather than just the key ones by clicking the button again.

Key images are always indicated by a key symbol in the top left corner of the viewport.

A collection of key images (plus a description and a label) is called a key note. By default, when you open a study, the latest key note is opened with it. Key notes are visible as a series in the Data Selector, with modality code KO (‘Key note Objects’). If there is more than one key note, you can select which key note you want to view.

To select a key note ► in the Viewing Section, open the Layout toolbar (click the button in the margin with this icon). From the Key Notes drop-down list, select the key note you want to display. This menu may also appear in the toolbar.

You can open a specific key note from the Data Selector by opening the series that contains the key note.
Compression quality

Your images will have been sent to your Centricity Web client using whatever compression was set when you opened your study or studies for viewing in the Data Selector. If some form of lossy compression was used, this will be shown as part of the annotation in each viewport. You may, however, wish to receive the images again with a different compression setting. If you have a relatively low bandwidth connection to the Centricity Web Server, you may, for example, want to initially view a study using lossy compression (you will receive all the images more quickly), and then when you have found an image of particular interest, have this resent with no compression (hence maximum quality).

To do this, select a different Quality setting from the drop-down menu below the Pictorial Index and click the image in the Pictorial Index you want resent at this compression setting.

For more on quality and compression, see ‘Image compression and quality’ on page 53.
The viewport area

Most of the screen in the Viewing Section is devoted to actually viewing images. This is called the viewport area, because it is divided up into viewports, each of which contains a single image from the study or studies you are viewing.

You are not restricted to viewing images from just a single series or study in your viewports, indeed you may often wish to simultaneously display images from two series or studies to compare them for example. When you are viewing more than one series, the viewport area will be divided into separate series areas. The boundary between these series areas is indicated by a gray line that is somewhat thicker than the lines between adjacent viewports.

When the Viewing Section opens, Centricity Web will decide on the best viewport arrangement for the particular study, series or images you are viewing. You can, however, easily change the arrangement of viewports so it is more convenient for your work. You can also save your viewport layouts for each modality so that Centricity Web will automatically use these when it opens suitable studies for viewing, see ‘Configuring your viewports’ on page 71 for details.
The active viewport and series area

The center of the Viewing Section screen consists of a number of rectangular viewports in which you view your images.

Whenever you are displaying more than one viewport, one of them will always be active. Whenever you do anything such as zooming, panning or windowing, Centricity Web will update this viewport first and then the others (provided your Scope is not set to Viewport).

To make a viewport active ▶ click anywhere inside the viewport. A red box will highlight your active viewport.

Similarly, if you are viewing more than one series in your viewport area, one of the series areas will be active. This is always the one in which your active viewport is located. This means that to make a series area active, click a viewport inside it.
Filling your viewports with images

To display images in your viewports, click the related thumbnails in your Pictorial Index.

When viewing more than one series simultaneously, click one of the viewports inside it to activate the series area you want to change.

Now click in the Pictorial Index on the image that you want to appear first in your series area. The subsequent images will then fill the series area in the order in which they appear in the Pictorial Index.
Browsing images quickly

You can browse using the View next images and View previous images toolbar buttons. Click these to display the next or previous images in the series. (If you have four viewports, for example, you will see the next four images in the series when you click View next images). To indicate where you are in the series, the highlighted area of the Pictorial Index is also updated.

If your mouse has a scroll wheel, you can also use this to browse images. You may have to click inside the active viewport to set the input ‘focus’ to the viewport.

Using keyboard shortcut keys

With Centricity Web, you can use a range a shortcut keys to navigate through your images.

<table>
<thead>
<tr>
<th>Navigation key</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td>Shift to first image(s) in series</td>
</tr>
<tr>
<td>End</td>
<td>Shift to last image(s) in series</td>
</tr>
<tr>
<td>ArrowRight</td>
<td>Shift to next image(s) in series</td>
</tr>
<tr>
<td>ArrowLeft</td>
<td>Shift to previous image(s) in series</td>
</tr>
<tr>
<td>PageDown</td>
<td>Shift to next page of images</td>
</tr>
<tr>
<td>PageUp</td>
<td>Shift to previous page of images</td>
</tr>
<tr>
<td>ArrowDown</td>
<td>Next series in study</td>
</tr>
<tr>
<td>ArrowUp</td>
<td>Previous series in study</td>
</tr>
</tbody>
</table>

Depending on the modality you are viewing, you can also hold down the Alt key and press a range of keys to activate a shortcut key. By default, these are defined as in the table below.
<table>
<thead>
<tr>
<th>Default key</th>
<th>CR/DX/MG</th>
<th>CT</th>
<th>MR</th>
<th>RF/US/XA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alt+1</td>
<td>Abdomen</td>
<td>445</td>
<td>620</td>
<td>Gradient Echo T2</td>
</tr>
<tr>
<td>Alt+2</td>
<td>Chest</td>
<td>628</td>
<td>436</td>
<td>Lung Window</td>
</tr>
<tr>
<td>Alt+3</td>
<td>Skull</td>
<td>515</td>
<td>776</td>
<td>Liver Window</td>
</tr>
<tr>
<td>Alt+4</td>
<td>Cervical Spine</td>
<td>735</td>
<td>783</td>
<td>Body Window</td>
</tr>
<tr>
<td>Alt+5</td>
<td>Shoulder</td>
<td>489</td>
<td>602</td>
<td>Brain/Sinus</td>
</tr>
<tr>
<td>Alt+6</td>
<td>Knee/Ankle</td>
<td>646</td>
<td>625</td>
<td>Cervical Spine</td>
</tr>
<tr>
<td>Alt+7</td>
<td>CT Lumbar Spine</td>
<td>877</td>
<td>108</td>
<td>CT Lumbar Spine</td>
</tr>
<tr>
<td>Alt+8</td>
<td>Extremity</td>
<td>342</td>
<td>56</td>
<td>Extremity</td>
</tr>
<tr>
<td>Alt+9</td>
<td>Foot</td>
<td>958</td>
<td>455</td>
<td>Foot</td>
</tr>
<tr>
<td>Alt+0</td>
<td>Femur</td>
<td>727</td>
<td>747</td>
<td>Femur</td>
</tr>
</tbody>
</table>

Modality dependent windowing shortcut keys
Viewing presentation states

A study you are viewing may contain presentation states: image annotations and settings such as window levels, zoom, pan, flip, rotation, shutters and inverted windows. These settings are stored as separate series with the study, and you can view either the original images, or the images with the settings from the presentation state applied. When you open a study, Centricity Web applies the most recent presentation state by default.

**To switch between presentation states** right-click in a viewport, then from the menu that appears select Presentation States and the presentation state you want to view.

You can also select the presentation state from a drop-down list in the toolbar (if shown) or the drop-down list on the Layout tooltab (click the button in the left or right margin with this icon to display the tooltab).

To display the original image(s) without any presentation state applied, select ‘< no presentation state>’ from the drop-down list.

When you switch between presentation states, you may not always see a change in the viewports. This is because a presentation state contains separate settings for each image, and the images you are currently looking at may not have been changed.

You can also select a presentation state in the Data Selector - see ‘Opening presentation states’ on page 52 for more on this.
Pinning images

When you are examining a series you may have an important scout (reference image) which you would like to display on your screen while you browse the rest of the series. Centricity Web lets you do this by ‘pinning’ images in your viewports.

When an image has been pinned in a viewport it will remain in place and unchanged while the images in the other viewports change. The image is truly ‘frozen’. It will remain unchanged whatever you do in the other viewports.

To pin an image in a viewport ➤ click the viewport to select it, then click the Pin Image button ( ) in the toolbar to pin it. You can also right-click in a viewport and select Pin Image from the menu that appears to pin an image.

A thumb tack ( ) will appear in the top left corner of the viewport to indicate that the image has been pinned. You can pin as many viewports as you like.

To unpin a pinned image ➤ click the viewport to select it, then click Pin Image button ( ).
Setting the Scope of your changes

Centricity Web offers many features and tools to manipulate images in the viewports.

You will probably want to window the image, zoom and pan for example. With Scope you have a versatile tool for limiting changes to a single viewport, a selection of viewports, a series or a study.

If, for example, you click the Viewport option in Scope (below the tooltab buttons) you can window, zoom, and pan every individual viewport on your screen.

At other times, when you are zooming and panning to view a particular structure, for example, you will want all the other viewports (all the images in the series area in fact) to pan and zoom in the same way. To do this, click the Series option in Scope.

When you are viewing more than one series in a study, to compare them for example, you can have Centricity Web update the images of all the series in the study by clicking the Study option.

If you are viewing multiple studies, the All option will cause all viewports to be updated regardless of which series or study the image they are displaying is from.

The Scope is set to Series when you first enter the Viewing Section.

Setting the Scope to a selection of viewports

You may want to set the Scope to some, but not all the viewports in a series. An example would be if particular images in a series appear unduly dark compared to the others, and you only want to adjust the windowing of these images.

To set the Scope to a selection of viewports make sure the Scope is set to Viewport: select the Viewport radio button, if this is not already active. Hold down the Ctrl key, and click the viewports you want to include in the Scope. Click selected viewports again to remove them from the selection.

On color displays, you will see that the selected viewports display a blue border to indicate that they are part of a multiple selection.

To reset the Scope to a single viewport click the viewport you want to set the Scope to. If it is blue or red, click a viewport without a color first.
Working with tooltabs

Tooltabs group different tools for performing various types of activity, such as windowing, measuring and viewing cines etc. These tooltabs are generally hidden until you need to use them to maximize the space you have available for viewing your images. To make them appear, you click one of the buttons in the margin of the viewport area, on the opposite side of the Pictorial Index. The tooltab associated with the button will then slide out, ready for you to use.

To hide the tooltab, click the same tooltab button again or on the arrow button in the top corner of the tooltab. The tooltab will also automatically slide out of view again when you click in a viewport. If you do not want it to do this, you can, however, ‘pin’ the tooltab.

Pinning your sliding tooltabs

When a sliding tooltab is visible and you click in a viewport, the tooltab will automatically slide out of view again. This can be very convenient since it will no longer obscure any of your viewport area. You may, however, wish to keep the tooltab in place so you can quickly use it again. To ensure it does not automatically slide out, you can pin it.

To pin a tooltab ▶ click the Pin button ( ) at the top of the tooltab.

Click again on the pin button to release the tooltab.
Quick access to functions using the toolbar

Centricity Web has a toolbar: A set of tools you can use to easily perform common tasks while viewing images. Your system administrator determines the buttons that Centricity Web displays. However, a different toolbar will be shown for each modality by default.

You can also manually select a toolbar.

To manually select a toolbar ▶

1. Click the **Set Preferences** button ( ). A sliding tooltab opens.
2. Select the type of toolbar you want from the **Toolbar** drop-down list.
3. Click the **Close** button ( ) to remove the sliding tooltab from the viewing area.
Configuring your viewports

When you are viewing images, you can have anything from just one large viewport to a sophisticated layout with larger and smaller viewports showing images from a number of different series or studies. This would, for example, enable you to readily compare two different series or studies from a patient taken at different times.

To quickly select from a range of standard layouts, you can use the Layout tooltab, or toolbar icons (if present). To show the Layout tooltab, click the button in the margin with this icon.

Using the Layout tooltab

The Layout tooltab provides a number of ready-made layouts for your viewports and lets you readily create your own layouts. You can even save a ‘default layout’ for each modality that Centricity Web will automatically use when you open studies from the same modality, see ‘Saving a default layout’ on page 72.

At the top of the tooltab are Series areas buttons. Use these to divide your viewport area into two series areas, either vertically or horizontally, or to have just a single series area (covering the whole viewport area and in which you will always view images from the same series).

Below these buttons, in the Layout section of the tooltab, you use the buttons to specify how many viewports there should be in each of your series areas. First click one of the viewports in the series area you want to change (to make the series area active). Then click one of the Layout buttons. Some of the buttons in this section may also be present as toolbar buttons, so you can switch layouts without having to open the tooltab.

If you prefer a viewport layout that is different to any of the buttons offered on the Layout tooltab, you can create your own using the Rows and Cols (Columns) fields in the Layout tooltab.

Enter a whole number between 1 and 8 in each of the Rows and Cols fields and click the button between the fields. Your series area will adopt the layout you specified. The button between the Rows and Cols fields will indicate the layout you created.
Saving a default layout

If you typically use the same layout for studies of the same type, you do not need to keep creating this layout afresh each time you view a new study. You can save a default layout that Centricity Web will then remember and use the next time you open a study of the same modality.

To save a default layout ▶ make sure the arrangement of viewports and series is exactly how you want it. Then, on the Layout tooltab, click **Save Active Layout**.

Using the right mouse button menu to create layouts

Apart from using the Layout tooltab, you can select a layout using the pop-up menu which appears when you right-click inside the viewing area.

To select a layout using the right mouse button menu ▶ click the right mouse button anywhere in the viewport area. Select **Series area layout** from the menu that appears and then the option you require.
Windowing your images

There are two ways to window your images in Centricity Web. For quick and easy adjustments, you can drag with the right mouse button in a viewport or, for more precise adjustments, you can use the Windowing tooltab.

Windowing with the mouse

You can drag using the right mouse button to adjust both window center and width in a viewport.

To use the mouse to change the window center ➤ click the right mouse button inside a viewport and keep it pressed down. The mouse pointer will change into a sun ☀ icon. Then, with the right mouse button still pressed, move the mouse up or down.

To use the mouse to change the window width ➤ click the right mouse button inside a viewport and keep it pressed down. The mouse pointer will change into a sun ☀ icon. With the right mouse button still pressed, move the mouse left or right.

The further you drag the mouse, the greater your changes will be. You can also drag in any other direction to change both the window center and width at the same time.

The viewport will be updated almost in real time, giving you a truly interactive windowing tool.

Windowing and Scope

As with other adjustments you make in the viewports, the images in your other viewports will be updated (or not be updated) in the same way depending on your Scope setting (see ‘Setting the Scope of your changes’ on page 68).

Windowing using the tooltab

The Windowing tooltab gives you precise control over windowing your images. To access the Windowing tooltab, click the button in the margin with the sun ☀ icon.

Using the slider bar

The slider bar lets you accurately adjust both level and width.
To adjust windowing width or center using the slider bars ➤ make the viewport active you want to window- click it, to highlight with a box around it. Drag the width or center slider on the Window images tooltab upwards or downwards.

The numbers in the Center and Width fields above the sliders will also change to indicate your current values.

Directly entering exact values for level and width

Instead of adjusting the slider bars, you can enter exact values for level and width directly in the Center and Width fields.

To enter center and width values directly ➤ click the Center or Width field on the Window tooltab. Type in your value for center or width. Click elsewhere on the tooltab, or press Enter or Tab on the keyboard, to bring the change into effect.

Using pre-defined settings

You can also create and use pre-defined center and width settings for a specific modality.

To use a pre-defined setting ➤ from the drop-down list on the Windowing tooltab, select the pre-defined setting you want to use. This menu may also be present on the toolbar (depending on toolbar settings).

To create new settings, see Creating pre-defined windowing settings.

The Auto setting

You will always find a pre-defined setting called Auto in the list. This applies values by finding the maximum and minimum pixel values of your image and by selecting window center and width values that span this range. Auto windowing is also automatically applied if no pre-defined windowing settings have been stored for your images.

The Full Range setting

This sets the minimum and maximum values based on the bit depth of the image, without taking the actual pixel values into account. For a 16-bit image, for example, width $= 2^{16} = 65536$ and center $= 65536/2 = 32768$.

Creating pre-defined windowing settings

You can make your windowing settings available for use with other images by making them into pre-defined settings. These will then appear in the drop-down list on the Windowing tooltab ready for you to select when you need them.
To create pre-defined windowing settings ►

1. Adjust the windowing level in the active viewport using the mouse or slider bar or by typing specific values in the Center and Width fields on the Windowing tooltab.

2. Click Add on the Windowing tooltab.

3. In the Add Window Level dialog box, type a description for the settings if you wish (or leave the name based on the current windowing settings as is).

Optimizing parts of images using regions of interest (ROI's)

You may want to optimize your window settings for just part of an image – when studying bone or soft tissue for example. You can do this by creating a Region of Interest (ROI) and letting Centricity Web optimize windowing settings for this area. You can resize this ROI and move it around your image. Almost in real time, Centricity Web will automatically adjust the windowing of the image to optimize it for the part of the image inside the ROI.

To use an ROI to optimize windowing for part of an image ►

1. Click inside a viewport and then the Window ROI button (with this icon) on the toolbar or Windowing tooltab.

2. Move the ROI window that is created in the viewport to the region you want to optimize by clicking in the ROI and dragging.

3. Adjust the size of your ROI if necessary by dragging on its borders or corners.

You can create more than one ROI inside the viewport by repeating this procedure. Centricity Web will use the ROI that was created or edited last for optimizing windowing.

When you have finished using your ROI, you can remove it.

To remove an ROI used to optimize windowing ► right-click within the ROI, and click Delete on the pop-up menu that appears, or drag the ROI outside the viewport.

Inverting images

The Windowing tooltab also allows you to invert (display the negative of) the grayscale of your images.

To invert an image ► click a viewport, and then the Invert button ( ) on the Windowing tooltab (the button may also be available on your toolbar).
Zooming and the magnifying glass

Centricity Web offers various ways of zooming in and magnifying your images to examine fine detail. You will find these options mainly on the Zoom and Flip/Rotate tooltab (click the button in the margin with this icon).

Zooming in fixed steps

You can zoom in by fixed steps of two, four and eight times.

To zoom in or out in fixed steps ►

1. Click within the viewport to highlight it, to make the viewport of the image you want to zoom active.

2. Open the Zoom and Flip/Rotate tooltab. In the Zoom area, click the Relative or Absolute radio button if necessary (see ‘Relative and absolute size’ on page 76). Select one of the four numbered options (1x, 2x, 4x, or 8x), or:
   Right-click and select Zoom from the menu that appears and select the zoom factor (1, 2, 4, 8 are relative, 1:1, 2:1, 4:1, 8:1 are absolute).
   You can also use the Zoom Relative (100%, etc.) or Zoom Absolute (1:1, etc.) toolbar buttons if they are visible.

Zooming with the slider

Use the zooming slider on the Zoom and Flip/Rotate tooltab, to zoom more flexibly.

To zoom in or out using the slider ► make the viewport of the image you want to zoom active (click within the viewport to highlight it). Drag the slider on the Zoom and Flip/Rotate tooltab to the right or left. The zoom factor is displayed above the slider.

Zooming with the mouse

You can also zoom with the mouse.

To zoom in or out using the mouse ► hold the mouse wheel or middle mouse button down and move your mouse up/down to change the zoom.

Relative and absolute size

At the top of the Zoom and Flip/Rotate tooltab are two radio buttons that size the images in the viewports somewhat differently.
If you click **Relative**, at a zoom factor of 1, the image will just fit in the viewport, independently of the original image size (this is how Centricity Web displays images by default in the viewports).

Clicking **Absolute** means that at a zoom factor of 1, the image will be displayed so that one pixel of the image when it was acquired will be represented by one pixel on the screen, hence at ‘absolute size’.

You can also switch between relative and absolute display by using the Zoom Relative (‘100%’) or Zoom Absolute (1:1 or 1:2) toolbar buttons if they are visible.

**Zoom quality**

When you zoom in, Centricity Web will often have to generate new pixels to fill in the gaps in the zoomed image. You can choose between two ways in which Centricity Web does this using the options in the Quality section of the Zoom and Flip/Rotate tooltab.

Normally, Centricity Web uses (bi-)linear interpolation for zooming since it typically provides a smoother and more natural image. Pixel replication, however, renders what was originally captured more faithfully.

**The magnifying glass**

Instead of zooming in and out, you can also use the ‘magnifying glass’ to look at small details in your images and manipulate that detailed image.

**To use a magnifying glass**

1. Click the **Magnifying Glass** button on the Zoom and Flip/Rotate tooltab. (You can also click the toolbar button with this 🕵️ icon.) A magnifying glass will appear.

2. Click anywhere on the magnifying glass and drag it over the viewport you want to look at in detail.

3. Resize your magnifying glass by dragging on its borders or corners.

4. Use the slider at the bottom of the magnifying glass to increase or decrease the magnification.

**To window within a magnifying glass** right-click in the image and hold the right mouse button down. A sun 🌞 symbol will appear. Move the mouse up or down, or from left to right, while holding down the right mouse button.
To change windowing parameters of the image in the magnifying glass ➤ right-click in the image. From the pop-up menu that appears, select *Inverted* to invert the image, or one of the windowing presets (see ‘Creating pre-defined windowing settings’ on page 74).

To remove a magnifying glass ➤ click the Close button [X] in the top right hand corner of the magnifying glass window.

The magnification produced by a magnifying glass is always in addition to any zooming which has been set on the Zoom and Flip/Rotate tooltab.

You can create as many magnifying glasses as you like at the same time.

**Flipping and rotating images**

Using the bottom section on the Zoom and Flip/Rotate tooltab you can flip the image in the active viewport both horizontally and vertically as well as rotate it in 90-degree steps either clockwise or counterclockwise.

**Resetting orientation**

After the orientation of images has been, or may have been changed, you might wish to ensure that you are viewing the original, unflipped and unrotated image. To do this, you can reset the image. This will reset the orientation, but leave other custom viewing settings, such as windowing, unchanged.

To reset the orientation of an image ➤ click on the image you want to reset and then on the Reset Orientation button (with this ⚡ icon) on the Zoom and Flip/Rotate tooltab.
Panning

When you zoom or magnify images in your viewports, they will become larger than the viewport itself. Panning (moving the image within a viewport) then becomes important. This is very easy to do by dragging within the viewport.

To pan (move an image around) within a viewport, click (with the left mouse button) within the viewport and hold the mouse button down. The pointer will change into a hand icon. Now pan the image by dragging in the desired direction.

Panning and Scope

If the Scope option is set to Series, Study or All, images within other viewports will be updated in the same way. If you just want to pan one viewport, make sure Scope is set to Viewport.
Creating cine loops

The automatic display of a sequence of images and the effect of motion this creates can greatly assist in the diagnostic process. Centricity Web allows you to quickly create and manipulate such cine loops.

A cine loop is a continuous, sequential display in a viewport of all the images (or a subset of them) in your study or series. You can run one automatic cine loop at a time, though it is also possible to manually operate an additional cine while the one automatic loop is running. You can also adjust the windowing level and pan and zoom in the viewport while an automatic cine is running.

You create and control cine loops using the Cine tooltab (click the button in the margin with this icon). This lets you turn cine loops on and off, take manual control of the cine loop, decide how the cine loop should play, set the speed the cine should play at and select what range of images should be in the cine. Most of these functions are also available via toolbar icons, and the scroll wheel of your mouse.

**Automatic cine loops**

Although you can exert a great deal of control over your cine loops, creating them is very easy since, with the click of a button, Centricity Web will automatically start playing a cine with suitable values. Using the Cine tooltab, you can then adapt the cine more precisely to your wishes while it is playing. The changes will take effect almost instantly, so you can see the effect they have and fine tune as necessary.

**To create (and play) a cine loop** click inside the viewport you want to use to display the active cine. Click the button in the toolbar with this icon, or select the On radio button on the Cine tooltab.

**To stop a cine loop** make sure the viewport containing the cine loop you want to stop is active. Click the button in the toolbar with this icon, or select the Off radio button on the Cine tooltab.

The viewport will revert to the image it held prior to hosting the cine. If you leave the Viewing Section while a cine loop is still running it will be stopped automatically by Centricity Web.

**Up, down and bounce**

Use the Up, Down and Bounce options on the Cine tooltab, or the toolbar icons, to decide how the cine loop will play and repeat itself.
• Click Up 🖇️ to start the cine playing from the last image through to the first and then repeat.

• Click Down 🖇️ to make the cine play from the first image to the last and then repeat.

• Click Bounce 🖇️ to make the cine play from the first to the last and then reverse the playing order and play from the last to the first and then repeat.

**Setting the speed**
On the Cine tool tab you can also set the speed (in number of images per second) you would like the cine loop to play at. This is the *maximum* speed. Playing cine loops fast will place significant demands on your hardware. The actual speed is determined by what your system’s hardware is capable of.

After entering values in the field, press the **Enter** or **Tab** key on your keyboard to make the change.

The speed Centricity Web actually manages to achieve is indicated below the box where you enter your desired speed.

While running the automatic cine loop, you can change its speed with the scroll wheel of your mouse if you have one. Click in the viewport that contains the cine, then scroll the wheel away from you to increase the speed, and towards you to decrease it. The speed of the cine loop will override the speed set on the Cine tool tab, but will not exceed it.

**Selecting a range of images for the cine**
Unless instructed otherwise, Centricity Web will include in the cine all the images in the series that the image in the viewport is part of. You can easily change this, however, so that you only see the particular range of images you are interested in. To do this you can use the Cine tool tab.

**To adjust the range of images in a cine loop** change the numbers in the Maximum and Minimum boxes on the Cine tool tab.

**Manually controlled cine loops (stack-mode displays)**
For additional control, you can decide to operate a cine manually. This will result in a manual cine loop, also known as ‘stack-mode’ display.
To create a manual cine loop make the viewport you want to use to display the cine active (click inside it), then click the Manual radio-button on the Cine tooltab. You can ‘play’ (scroll through) the cine by dragging the slider on the Cine tooltab ( ) or by clicking in the viewport and dragging while holding the left mouse button down. You can also press down on the scroll wheel of your mouse and scroll towards or away from you for the same effect.

When you have created a manual cine in a viewport, drag up and down with the mouse to scroll through the cine.

Using the right mouse button to run cine loops
You can also run cine loops by using the menu which appears when you right-click inside a viewport.

To start or stop a cine using the shortcut menu right-click within the viewport and select Cine and then On, Manual, Off etc.

You can also use the menu to switch between Manual and On (automatic) and vice versa.

Synchronizing (linking) cine loops
With Centricity Web, you can have a number of cine loops running at the same time. Initially these will run independently and unsynchronized. You may, however, wish to link them so that they play together in synchronization.

Synchronizing cine loops by linking them is as easy as clicking the appropriate radio button on the Cine tooltab.
To create a link between cines ➤ create the cines you want to link together. Select the cines by holding down the Ctrl key on your keyboard and clicking in the viewports containing the cines. Adjust the offset if necessary, and click the link cine toolbar button 🔗.

The initial positions of the cines when the link is started determine the offset for the linked cine.

Changing the offset of linked cines

When cines are linked, they will typically play so that the first image in one viewport appears at the same time as the first image in another viewport. You can, however, change the offset (or phase) between the cines so that, for example, image 6 of one cine is visible when image 1 of the other cine is visible.

To change the offset between linked cines ➤

1  Make sure the cines are in manual mode and there is no link between them (if the cines are already linked, you should turn off one of the cines to break the link).

2  Drag with the mouse in the viewports and/or use the slider on the cine toolbar to align the images you wish to coincide when the cines are playing.

3  Hold down the Ctrl key on your keyboard and then click the link cine toolbar button 🔗.

If the cines are of different length or the offset is such that there is no image to show in the viewport while viewing parts of the linked cines, the viewport will appear black.
Working with annotations

You can create and view image annotations in a viewport. The following image annotation tools are available:

- **Probe**: the pixel value of one point.
- **Distance**: the distance between two points.
- **Angle**: the angle between two lines that are connected.
- **COBB angle**: the angle between two lines that are not connected.
- **Profile**: the pixel values along a line.
- **ROI**: indicating a Region of Interest. This is displayed as a rectangle or ellipse.

In addition, you can view (but not change):

- **Viewport annotations**: text along the edge of the viewport, showing patient data etc.
- **A caliper**: a ruler on an image, showing its scale.

You can display or hide annotations, so, for example, you can get a better view of images overlapped by annotations. You can switch On and Off the display for viewport annotations and image annotations independently.

**To switch the viewport annotation display on or off**

1. Right-click in a viewport.
2. Select **Annotation** from the shortcut menu that appears.
3. Select the level of annotation you want to display on your images: **None**, **Basic** and **Full**.

**To switch image annotations (probes, angles, ROI's etc.) on or off**

1. Right-click in a viewport.
2. Click **Annotation** on the shortcut menu that appears.
3. Select or clear the **Show Image Annotation** item on the shortcut menu.

**To switch the caliper display on or off**

1. Right-click in a viewport.
2 Click **Annotation** on the shortcut menu that appears.

3 Select or clear the **Show Caliper** option from the shortcut menu.

### Creating annotations on your images

While viewing images, you can create various annotations on your images. Some examples of annotations you can create include probes, profiles, distances and angles.

#### Using probes

Probes allow you to measure point values within a viewport.

**To use a probe**

1 Click the **Probe** button ( ) on the toolbar (if present) or on the Annotation and Measurement tool tab (click the button in the margin with this icon), or right-click in a viewport and select **Annotation** → **Create** and then **Probe** from the submenu.

2 Drag the colored probe to the location whose point values you want to measure.

#### Using profiles

Profiles allow you to measure pixel values along a line.

**To use a profile**

1 Click the **Profile** button ( ) on the toolbar (if present), or on the Annotation and Measurement tool tab (click the button in the margin with this icon), or right-click in a viewport and select **Annotation** → **Create** and then **Profile** from the submenu.

2 Click on the start (S) and end (E) points to adjust the beginning and end positions of the profile. If necessary, zoom in for very fine adjustment. You can move the entire line by clicking on its center and dragging it.

3 Right-click the line and select **Show Info** from the shortcut menu to view a graph of the pixel values along the line.

#### Measuring distances

You can measure distances using Centricity Web.
To measure a distance ►

1. Click the **Distance** button ( ) on the toolbar (if present), or on the Annotation and Measurement tool tab (click the button in the margin with this icon), or right-click in a viewport and select **Annotation → Create** and then **Distance** from the submenu. A distance line will appear in your viewport.

2. Click and drag the cross-hairs to create your measurement. If necessary, zoom for very fine adjustment. You can move the entire line by clicking on its center and dragging.

**Measuring angles**

You can use Centricity Web to measure angles.

To measure an angle ►

1. Click the **Angle** button ( ) on the toolbar (if present), or on the Annotation and Measurement tool tab (click the button in the margin with this icon), or right-click in a viewport and select **Annotation → Create** and **Angle** from the submenu. An angle will appear in the viewport.

2. Drag the end points to change the angle, or drag one of the lines from its center to move the entire angle.

**Measuring COBB angles**

You can use Centricity Web to measure Cobb angles. Cobb angles are particularly useful for small angles and when the apex of the angle lies outside the viewport.

To measure a COBB angle ►

1. Click the **COBB Angle** button ( ) on the toolbar (if present), or on the Annotation and Measurement tool tab (click the button in the margin with this icon), or right-click in a viewport and select **Annotation → Create** and **COBB Angle** from the submenu. Two parallel lines will appear in the viewport.

2. Drag the end points to change the angle, or drag one of the lines from its center to move the entire angle.

**Creating Regions of Interest**

A Region of Interest (ROI) allows you to mark part of an image for closer study.
To create a Region of Interest:

1. Display the Annotation and Measurement tool tab (click the button in the margin with this icon).

2. In the ROI Creation area of the Annotation and Measurement tool tab, use the drop-down list to select the ROI type (Annotation for use with annotations, Shutter to block out unwanted parts of the image or Inverted Window to invert part of a window).

3. Click inside the region and drag the rectangle or ellipse to move it to its precise location. Click the border to resize the region.

Showing and hiding ROI’s

You can show or hide your ROI’s by selecting one of the radio buttons in the ROI State section of the Annotation and Measurement tool tab. ‘None’ hides the ROI fully, ‘Show’ reveals the ROI, while ‘Activate’ turns on the effect of a shutter ROI (deselecting this makes it easier to initially position your shutter).

Annotation options

Once you have created an image annotation, you can change the way it looks (the font, the color and line style). You can view statistics for selected image annotation and also delete them.

To change the color of an annotation: right-click on the annotation. Select Color from the menu, and in the submenu, navigate to the color you want.

To change the line style of an annotation: right-click the annotation. Select Line style from the menu, and in the submenu, navigate to the line style you want.

To view statistics associated with an image annotation: right-click on the annotation and select Show Info from the menu that appears.

This option is available only for profiles and ROI annotations.

To delete an annotation: right-click on the annotation and select Delete from the menu that appears.

Spine labels (with PACS only)

If you are viewing images created on an RA-1000 workstation, you should be able to view any spine labels on the images. These include primary spine labels (annotations on a sagital image indicating the position of vertebrae) and secondary spine labels (annotations on an axial image indicating the slices closest to the vertebrae).
Primary spine labels are displayed as fixed text annotations, while secondary spine labels are displayed with the viewport annotations, positioned by default for CT and MR studies at the top-centre of the viewport.
Viewing reports in the Viewing Section

You can view reports associated with a study you are viewing. Click one of the buttons under the viewport area; **Local Report** or **HIS/RIS Report** for example. The reports window and buttons work in just the same way as in the Data Selector, see ‘Viewing reports in the Data Selector’ on page 54 for details.
Exporting and printing

While viewing in Centricity Web, you can readily export images for use in other applications.

Copying to the clipboard

Perhaps the quickest way to do this is to copy the entire screen and put it into the memory of the computer (the Windows clipboard). If you do this, you can paste the images into other applications such as word processing or presentation software. You should be aware, however, that for higher resolutions a whole screen will create a file of a considerable size.

To copy the browser contents to the Windows clipboard

Hold down the Alt key on your keyboard and press the Print Screen key on your keyboard.

You can also copy the image in a single viewport into another application using the clipboard.

To copy a single viewport image to the Windows clipboard

Right-click with the mouse in the viewport containing the image you want to copy. Click Copy to clipboard.

In both cases, the image and its annotations will be copied to the clipboard. You can then paste the contents of the clipboard into another Windows application such as a word processor or a presentation package using the Paste command in that application.

TIFF and JPEG export

You can also export images as TIFF and JPEG files.

To export a viewport image as a TIFF or JPEG file

Click with the right mouse button in the viewport of the image you want to export. Select Export... from the pop-up menu. Select whether you want to export the image as a TIFF or JPEG file, specify a file name, a quality factor if you selected JPEG, and a location for the file to be saved.
De-identifying images

With Centricity Web, you can anonymize images that are exported to a file. Images that are de-identified can be exchanged over insecure channels or be used as example images without the risk of the identity of the patient being revealed. To do this, make sure the De-indentify image check box is checked in the Save As... dialog box when exporting your image.

Printing viewport areas and single viewports

You can print the entire contents of your viewport area. You can therefore assemble a selection of images of interest in your viewports and print them all on a single sheet.

To print your entire viewport area ➤ right-click in a viewport and select Print Layout... from the pop-up menu.

You can also print single viewports along with all the annotation they contain:

To print a single viewport ➤ right-click in a viewport and select Print... from the shortcut menu.
Comparing studies and series

With Centricity Web you have a powerful and versatile tool for comparing studies and series. It allows you to compare multiple studies or series from the same or different patients, to compare CT, MR (T1/T2 comparison for instance), US studies with color frame-grabbed images, and much more.

To use Centricity Web to its full potential for comparing studies and series, you should be familiar with opening multiple studies, using different screen layouts, setting the Scope, pinning images, and creating cine loops. All these aspects of Centricity Web are covered earlier in this chapter, but they are briefly described again here as they relate to comparing studies and series.

Selecting multiple studies and series

When comparing studies, you will typically want to open two or more studies from the same patient at the same time. These can be the latest and prior studies from the same modality acquired at different times or studies from the same patient acquired by different modalities, or some combination of these.

Before you can open studies, you need to select them. For this, they must be displayed in your worklist.

Once you have the studies you want to compare in your study or patient list, you select them in the usual Windows way. Click one of the studies to select it. To add to your selection, hold down the ‘Ctrl’ key and click additional studies.

Viewing selected studies

Once you have selected the studies you want to compare, you can view them by clicking on one of them.

Once in the Viewing Section, you will see the studies represented in the Pictorial Index by sections headed by light gray bars with the name of the patient and study description if available. You will also see two series areas created in the viewport area.

Placing your images in the viewports

Once you have opened your studies for comparison in a suitable layout, you will want to locate your images appropriately in your viewports. If you want to change the contents of a series area, click within its first viewport. Now click in the Pictorial Index on the first image of the study or series you want to see in the area.
In this way you could, for example, compare two versions of the same series displayed simultaneously in two areas or compare three series alternately in a two series layout by exchanging one for another.

The importance of Scope

Located below the tooltabs, the Scope settings in Centricity Web lets you determine which images certain actions, such as windowing, zooming and panning, will affect. It is particularly useful for comparing studies and series, and is covered in detail in ‘Setting the Scope of your changes’ earlier in this chapter. If the Viewport radio button is selected, your actions will only affect the active viewport. If the Series radio button is selected, then only the active series (the one containing the image in the active viewport) will be affected by your actions. If Scope is set to Study, all the displayed series in that study will be changed in the same way by your actions. If Scope is set to All, all the displayed studies will be changed by your actions.

Scope is also important while scrolling through the images using the View next images ➤ and View previous images ◄ buttons. If Scope is set to Series, only the active series will scroll. If you set Scope to All, all the displayed studies will scroll in synchronization.

Pinning combinations

When you have an image in a particular viewport that you want keep in view, you can ‘pin’ it by clicking the thumb tack button ( ). You can pin as many viewports as you like with whatever images you like, so you can quite literally display exactly the images you want where you want them in the viewing area.
Working with multi-frame images

Multi-frame images are DICOM images for which the pixel-data space has been extended to be able to contain multiple ‘pictures’ called frames. All frames in an image share the same DICOM Image header (containing various non-pixel data concerning the image like patient demographics, its circumstances of creation and parameters for optimal viewing).

There are various types of multi-frame image. For example, 2D +T multi-frames (cine runs) contain sets of 2-dimensional images, all taken on the same coordinates, with different timestamps at more or less fixed intervals (DICOM specifies that the time intervals may differ). They typically show the effect over time of some contrast agent through vessels. One example of these is cardiac cine runs. In 3D multi-frames (slices of a volume), sets of 2-dimensional images are created at (more or less) the same time on different layers or at different angles. An example is the full body scan. There are also combinations of the above types, such as the SPECT gated study.

Centricity Web supports multi-frame images in many areas such as Nuclear Medicine, Ultrasound, X-ray Angiography and Radio Fluoroscopy.

The Pictorial Index and viewing multi-frame images

You open series and studies containing multi-frame images for viewing in much the same way as for ordinary image types. Unless you view the multi-frame image as a cine (see below), you will, however, only see the representative image in your Pictorial Index and viewports. The number of frames will be shown as a number at the top of the image.

Viewing multi-frames as cines

You can readily view all the frames in a multi-frame image as a cine.

To view a multi-frame image as a cine ➤ Click the viewport you want to display the cine in to select it, and then on the multi-frame image in the Pictorial Index. Next, click the Start Cine button ( ⚫ ) on the toolbar, or the On radio button on the Cine tooltab ( ⚫ ).

Or

Right-click a viewport displaying a multi-frame image and select Cine → On or Cine → Manual from the pop-up menu.

A cine will open in the current viewport. For more information on using cines, see ‘Creating cine loops’ on page 80.
The magnifying glass while viewing multi-frame cines
When you are working with a cine in manual mode, you can closely inspect individual frames using the magnifying glass.
Displaying cutlines

With Centricity Web you can display cutlines (intersections between two planes) provided your study has images suitable for this. They must, in particular, be part of CT or MR studies.

To display cutlines on images ▶ click the toolbar button with this icon (to enable all cutlines), or right-click in a viewport and, from the menu that appears, select Cutlines and then a series. The series are listed with their series descriptions.

The first and last cutlines of a series are shown. To view a particular cutline, drag the cutline selector line that is shown between the first and last cutlines.

The toolbar button for cutlines (with this icon) acts in the same way as the ‘All’ and ‘None’ menu entries. It appears selected when at least one cutline series is enabled. If you press it then, all cutlines are turned off.

What happens when cutlines are turned on depends on the layout. If the layout is 1x1 in the active series area, cutlines are enabled for all the images in the series. It is then possible to view two series in two series areas with cutlines on each other. In all other layouts, the active image is pinned before cutlines are generated. This allows you to reuse the other viewports in the series area for the intersected images.

Pinned images and cines will also show up as cutlines. The lines can be dragged for those images, but nor the cine, nor the pinned image will change.

If a series contains images in random order, you will not be able to turn on cutlines, but the dragging will not produce meaningful results.

If a series contains multiple sequences of images with different orientations, still only the begin and endline of the series are shown. In this case the cutlines may not be parallel, and you may find cutlines on the image outside the region indicated by the start and end line.

Using cutlines to select images

You can also use the cutlines to select images for display.

To view the image represented by a cutline ▶

1. Pin the viewport containing your cutlines (to prevent it being replaced) by clicking the Pin Image button ( ).

2. Click the cutline of the image to display it.
3 The corresponding image will be displayed with as many subsequent images as will fit in the remaining viewports on your screen.

Viewing multiple sets of cutlines
You can show cutlines in more than one viewport at a time. For each viewport, you simply right-click and select the appropriate cutlines you want to view from the pop-up menu. If the Cutlines sub-menu offers more than one set, you can display as many of them as you like in the viewport.

To show or hide cutlines right-click in a viewport and select Cutlines from the pop-up menu. Click on the series you want to show or hide. (Series that are already displayed will have a tick next to them.)

Printing cutlines
Centricity Web treats cutlines as normal annotations so they can be printed just like other annotations.
Conferencing

The conferencing facilities built into Centricity Web allows two Centricity Web users to view the same images and discuss them even though they may be in another part of the hospital, the country or even the world. The Centricity Web client programs are synchronized, so if one zooms an image, the other will also see the effect of this. Measurements placed in a viewport on one client appear in the other client, and so on. It’s like viewing the same screen. With video and audio communication if webcams and microphones are installed, Centricity Web’s conferencing opens up new, more effective ways of working.

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For a Centricity Web conference, one of the two Centricity Web users opens a study they would like to discuss in the Viewing Section of their Centricity Web client. They then ‘call’ the other user, who should have their Centricity Web on (though not necessarily viewing any images with it). They will receive a message asking if they want to accept the call. When they confirm that they do, the user who made the call then clicks a button to start an image conference, and when the other user accepts this invitation, their Centricity Web will automatically open the study and display the same viewports and images as the Centricity Web that started the conference.

For the duration of the conference, the two Centricity Web clients are then synchronized, allowing either party to add measurements, zoom, window, point out features of interest with the mouse pointer, etc. Both Centricity Web clients will continue to show the same view of the study. A ‘text chat’ feature allows the two users to converse by typing in messages to each other, but if webcams and microphones are fitted to their machines, they can actually see each other and talk to each other too.

**About NetMeeting and Centricity Web**

Centricity Web makes use of Microsoft’s NetMeeting technology to create its real-time conferencing environment. If your Centricity Web client was installed with conferencing capability, NetMeeting will also have been installed on your system. Centricity Web may be configured so that NetMeeting automatically starts each time Centricity Web is started, or it may be necessary for you (and possibly the other party) to start NetMeeting manually. You can see whether NetMeeting is currently running on your system by checking for the NetMeeting icon in your Windows taskbar. If necessary, you can start it from within Centricity Web by clicking the NetMeeting button on the Conferencing tooltab.
Starting an image conference

Before starting an image conference, you should be sure that whoever you want to call has Centricity Web running and that NetMeeting is also running on his machine. The Centricity Web client of the person you are calling may be at the Query Parameters Dialog box, in the Data Selector, or may be viewing studies in the Viewing Section - it does not really matter. The recipient should also be at his computer - they will need to accept your call.

Before making the call, open the study you want to discuss in the Viewing Section of your Centricity Web client. You do not have to display the exact images you want to discuss prior to starting the conference (although, it could save some time during the conference if you do!) since you will be able to use your Pictorial Index and change the images in your viewports in the usual way. You will not, however, be able to return to the Data Selector during the conference, so you should make sure that all the images you want to discuss are available in your Pictorial Index.

Once you have the study open in your Viewing Section, you use the Conferencing tooltab to start the conference:

To start a conference

1. Slide out the Conferencing tooltab (click the button in the margin with this icon).
2. Click the NetMeeting button on the Conferencing tooltab to start NetMeeting, if necessary.
3. On the Conferencing tooltab, click the button with this icon. A NetMeeting dialog box will appear.
4. Select who you want to call from the drop-down list or enter a name in the field. (Setting up NetMeeting is beyond the scope of this manual - consult the NetMeeting documentation and/or your system administrator if you have problems connecting with it.)
5. Click the button with the telephone icon in the NetMeeting dialog box.
6 A message now appears on your screen stating ‘Waiting for a response from ...’ The screen of the person you are calling says that there is an incoming call and asks whether that person wants to accept it. You will know that the person has done so when a NetMeeting dialog box indicating that your two machines are in a call is shown (this also appears on the machine of the person you are calling).

7 When you see the dialog box indicating that you are in a call with the other party, click the Start Image Conference button on the Conferencing tooltab.
(You can minimize the NetMeeting dialog box yourself, or it should minimize itself when you click the Start Image Conference button - you should not, however, dismiss the dialog box by clicking its close button.)

8 The person you are calling will see a message containing an invitation to an image conference. They should accept the invitation.

9 As soon as the other party accepts your invitation, your image conference will start. The appearance of the other user’s mouse cursor (in the shape of a hand) will indicate that the conference has started successfully. If video has been configured on your system and you are using sliding tooltabs, you will see a Video button (with this icon) above your tooltab buttons. Click this to slide out your video window.
Receiving a conferencing call

Before you can receive and accept an invitation from another party for an image conference, your Centricity Web client must be running (though you need not be actually viewing any images), and NetMeeting must also be running. You can check whether NetMeeting is currently running on your machine, by looking for the NetMeeting icon in your taskbar.

If NetMeeting is not currently running, you can easily start it from Centricity Web:

To start NetMeeting ▶ open the Conferencing tooltab (NoSuchObject) and click the NetMeeting button at the top of the tooltab.

If this button is unavailable, NetMeeting is probably already running on your system. If you are certain it is not, or you have any other problem starting NetMeeting, refer to the NetMeeting documentation (at microsoft.com for example) or your system administrator.

When the other party calls you to initiate the image conference, you will see a message: “Incoming call from…”. Click Accept to accept the call.

A NetMeeting dialog box will then appear indicating that you are in a call with the other person. (You can minimize the NetMeeting dialog box yourself, or it should disappear of its own accord before the image conference starts - you should not, however, click Close in the dialog box.)

At this stage, the other person should send you an invitation to start an image conference. When you see a message to this effect, click OK to accept the invitation.

Your image conference will start and Centricity Web will take you to the study and display the same images and viewports that the person you are calling is viewing on his Centricity Web client. You can use their mouse cursor (in the shape of a hand) and, if video is configured, the video window should slide out. In addition, you will no longer have a Worklist button in your Viewing Section (since you are not allowed to return to the Data Selector for the duration of the conference).

Even though you did not start the conference, you will still be able to do whatever the other person can, such as windowing, zooming and adding measurements etc. Your changes will be reflected in the other person’s Centricity Web client, just as his changes will be reflected in yours.
Communicating during an image conference

Once you are in an image conference, you will be able to see and talk to the other person if you both have webcams and microphones installed. If either or both of you does not have these facilities, you can still communicate effectively with each other (without resorting to a telephone!) by using Centricity Web’s text chat facility.

To send a text chat message

1. Open the Conferencing tool tab ( ) and click the Text Chat button.
2. In the dialog box, type a message in the Message window.
3. Indicate to whom the message should be sent using the Send to drop-down list.
4. Click Send next to the message window to send your message. You will see incoming message in the Receipt window.
Changing to another study during an image conference

If you have a number of studies to discuss with your colleague, you can go through these quite easily using the conferencing facilities. The person who instigated the conference must be in charge, however, because the person who was initially called does not have a Back button and, therefore, cannot return to the Data Selector.

To view another study without ending the connection ➤

1. Click the **Worklist** button in the Viewing Section to return to the Data Selector (image conferencing will automatically stop, but NetMeeting will continue to run).

2. Select and open a new study and then click the **Start Conference** button on the Conferencing tooltab in the Viewing Section.
Running cines during an image conference

Due to the possibility of timing differences arising when automatic (self-running) cines are run, you cannot create these during an image conference (the On option on the Cine tool tab is unavailable). You can, however, still create manual cines and these are displayed and synchronized on the two Centricity Web clients.
What is synchronized during a conference (and what is not)

Centricity Web’s conferencing facility synchronizes most of the important aspects of viewing images, but to be certain to avoid any confusion between you and your remote colleague you should read and understand the following list of what are and what are not synchronized during an image conference.

What is synchronized during an image conference

• Windowing (when using the ROI, the ROI window will not show up in the remote system but the window level will synchronize)

• Zooming (when using a magnifying glass, this will not be visible on the remote system but the image on the remote system will have the same size as the one with the magnifying glass)

• Scrolling

• Pinning

• Panning

• Layout

• Image annotations

• Manual cine

• Key images display

• Cutlines

Centricity Web conferencing is independent of the resolution of the screens of the Centricity Web users. Both systems can have different resolutions and compression settings. There may, however, be very slight (generally negligible) differences with the Probe due to differences in these settings.

What is not synchronized during an image conference

• Tooltabs (if you slide out a tooltab in your Centricity Web client, for example, the corresponding tooltab will not slide out on the other Centricity Web client).

• Scope settings (there is, however, synchronization at image level, so if you window, for example, with a specific Scope setting, the Viewports on the other Centricity Web client will still update in the same way).

• ROI Info windows
• Show or hide the pictorial index
• Currently active window
• Report windows (floating or docked)
• Magnifying glass
**Emailing study links to others**

Though not directly part of Centricity Web’s conferencing facilities, the Email Study Link button at the bottom of the Conferencing toolbar provides a useful facility for referring others to particular studies.

This allows you to put a link (URL) to the study you are currently viewing in an email message that you can then send to a colleague. The recipient should be a known Centricity Web user. They will not be able to view images they are not authorized to view, so they should have personal authorization to access the study you are sending the link to.

**Viewing a study link sent to you**

If you receive an email message from a colleague containing a single link to a study on a Centricity Web Server, simply go to this link with your browser (typically, clicking on the link inside the email message will achieve this). Centricity Web will automatically go to the Viewing Section and display the images. You will not, however, have a Worklist button, so you will not be able to go to the database and select another study without exiting Centricity Web first.

If you receive a message containing links to multiple studies, when you open this link you will not go directly to the Viewing Section, but will be taken to the Data Selector instead. Your study list will contain those studies included in the link. You can then decide how you wish to view these studies (all together or one after the other, for example).
Emailing images

If you want someone to review images who is not a Centricity Web user, you will not be able to simply email them the link as described in ‘Emailing study links to others’ on page 109.

You can, however, always send them images as email attachments that they can view in a browser. To do this, copy the image to the Windows Clipboard:

To email an image ➤ right-click in a viewport and select Copy to Clipboard from the pop-up menu. Compose an email message to the recipient using your mail program and paste the contents of the Clipboard into this message.

You may want to anonymize the images by right-clicking, and then choosing Annotation ➔ None before copying them.
Customizing Centricity Web

Centricity Web is highly customizable to let you set it up for your own particular preferences and ways of working. Although most of the ways of doing this are covered elsewhere in this guide, this chapter brings together the main ways of tailoring Centricity Web to your needs, in terms of how it looks when it starts up and the changes you can make, such as hiding various elements, while using it to make the most of smaller monitors for example. Also provided are various tips on how you can use various features, such as right mouse button menus, to work more quickly and effectively with Centricity Web.

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Making the most of your screen area ..................... 114
Working with the right mouse button menu .......... 115
Depending on your type of monitor, your own type of work and personal preferences, there are various settings you can make to tailor Centricity Web to your needs.

Setting your preferences

Preferences are those settings that Centricity Web will use when it first starts up. These are your personal settings: If someone else uses the same machine and browser, they can have their own settings, so you need not worry about inconveniencing anyone else when you set your preferences.

The preference settings are grouped together in a sliding tooltab that appears when you click the Preferences button ( ) at the top right of the window in either the Data Selector or Viewing Section.

If you need to close and restart your Centricity Web client for any changes to come into effect a message box will appear stating that.

The position of the Pictorial Index

You can decide to have your Pictorial Index on either the left or right side of your browser window. Since your tooltabs (or Modality list in the Data Selector) are always on the opposite side, these will also swap over if you change your setting. Your Scope will also swap sides, but the buttons in the top right and bottom right corners of your browser window will remain where they are.

To position your Pictorial Index on the left or right ▶ click the Preferences button ( ) and select Left or Right from the Pictorial drop-down list on the Preferences toolbar.

Floating or docked report window

By clicking one of the buttons below your viewport area while in the Viewing Section, or study list while in the Data Selector, you can view any reports previously written for the study you are currently working with. You can decide whether this report should appear in a ‘floating window’ or as a ‘docked window’. The floating window is just like any other window in Windows - you can drag it around and resize it - even position it outside your Centricity Web if you are not running Centricity Web full screen. The docked reports window appears below your study list or viewport area. It is resizable in height, but always occupies the full width of your study list or viewport area. It does mean, however, that your report information always appears in the same place.
Both types of window can be shown and hidden using the **Show or hide report window** button ( ).

**To select a docked or floating report window** click the **Preferences** button and make sure the **Docked Report** check box is checked or unchecked.
Making the most of your screen area

Centricity Web is designed to give you the maximum possible area for viewing images, even if you are restricted by a relatively small monitor. This means you can very easily hide certain elements and only show them when you actually need them. The sliding tooltabs are an example of this, but you can also show and hide your Pictorial Index and report window.

**To temporarily hide your Pictorial Index** - click the button to hide the Pictorial Index and the button to display it.

**To temporarily hide your report window** - click the Show/Hide Report button in the top right corner of Centricity Web. Click the button again to show the report window again.

**Using your browser in full-screen mode**

You can use Internet Explorer’s full-screen mode to automatically turn off all unnecessary browser buttons, menu bars etc. and use your full monitor screen for displaying Centricity Web.

**To put Internet Explorer in full-screen mode** - Press F11 on your keyboard.

To return to normal mode, press F11 again.

**One-up mode for maximum size views**

While viewing a study, you can readily view any image at the maximum possible size simply by double-clicking on the viewport. This is particularly useful when you are working on a smaller monitor.

Double-click again on the viewport to put the display back to its previous state.
Working with the right mouse button menu

Various features built into Centricity Web to speed your work, such as windowing with the right mouse button and the use of the scroll wheel when viewing manual cines, have already been described elsewhere. Another feature that has not been fully covered, however, is the pop-up menu that appears when you right-click in your viewport area.

This offers much of the functionality of your tooltabs, but within easier, and faster, reach. You can, for example, turn on a cine in a viewport much more quickly by using the right mouse button menu.

We will not go into detail here of each of the options on the right mouse button menu - if you are familiar with the tooltabs the meanings of the options should be quite clear. While the right mouse button menu does not provide everything you need, it is recommended that as you become proficient with Centricity Web you aim to use it whenever possible - it really can help speed up your work.
Appendices
Installing Centricity Web

Requirements
Centricity Web is designed for systems running Windows 98, Windows XP, Windows NT Workstation 4.0, Windows Millennium or Windows 2000 Professional. At least 128 MB of system memory is recommended. The display adapter must be capable of displaying at least 64K colors (16-bit) with a minimum display resolution of 1024x768.

Microsoft Internet Explorer 5.5 service pack 2 or Internet Explorer 6.0 service pack 1 must be installed on your machine.

Browser settings
Prior to installing Centricity Web, you should make sure the browser settings are set appropriately.

In Internet Explorer, select Tools → Internet Options... from the menu bar. Click the Security tab of the Internet Options dialog box, click the Internet icon to select it and set the level to Medium. Then click on the Local intranet icon and also set this level to Medium.

Click the General tab of the Internet Options dialog box, click the Settings... button in the Temporary Internet files section and select the Automatically radio button.

A suitable setting for the ‘Amount of disk space to use’ is 100 MB.

Installation
The installation of Centricity Web is virtually fully automatic. Simply point your browser to the address: http://webservice/ami where ‘webservice’ is the name of the Centricity Web Server. You should obtain this address from your system administrator.
The first time you visit this address you will be redirected to the installation page for Centricity Web. Follow the instructions on this page.

If you plan to use Centricity Web’s conferencing facilities, you should install Microsoft NetMeeting. NetMeeting can also be installed when installing Internet Explorer.

Log-on for Windows 98 SE and Millennium
If your system is running Windows 98 SE or Millennium, you should set your system to log on to a Windows NT domain using Control Panel → Network → Services → Client for MS networks → Properties → Logon Validation → Log on to Windows NT domain.

Testing your installation
Point your browser to the same page you used for installing Centricity Web and click on the link for testing your installation.

You will see a test page and the three Active-X controls required by the Centricity Web client will be downloaded automatically.

It is possible that when these controls are installed some of your system files may need to be updated. If this is the case, you may need to reboot your machine to complete the installation.

You can use the test page to adjust the monitor’s contrast settings.

The required components for the Centricity Web will also be downloaded and installed/updated automatically if you connect directly to the Centricity Web Server without visiting the test page first. To do this, point the browser to: http://webservername/ami/html/.

Making Centricity Web your default home page
If your Internet Explorer is used almost solely with Centricity Web, you can make Centricity Web the home page of the browser. Then in order to use Centricity Web, you will only need to double-click on the Internet Explorer icon on your desktop. To do this, at the Query Parameters dialog box (that appears when you first start Centricity Web), select Tools → Internet Options... from the browser’s menu bar. On the General tab, click the Current button.

Creating a shortcut on your Desktop
If you don’t wish to make Centricity Web your default home page, you can still create an icon for your desktop that will immediately launch Centricity Web for you.
Right-click on your desktop and select **New → Shortcut.** In the Create Shortcut wizard, enter the URL of the Centricity Web Server start page (e.g. `http://myserver/ami/html/`) and enter a name for the shortcut when prompted (e.g. Centricity Web).
medical devices class I annex VII


In addition, we ensure and declare that the distributed CE marked products, as mentioned and falling within Class I, meet the provisions of the EC Directive which apply to them.

This Declaration of Conformity covers the complete Centricity Web V2.0 release and is valid for all products concerned bearing the CE mark and manufactured at the following site:

GE Medical Systems Information Technologies
8200 W. Tower Ave.
Milwaukee, WI 53201
USA

Bernie van Welt
Engineering Manager
GE Medical Systems IT
February 2003
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