



Imaging Viewing Solution App

Quick Start Guide



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Overview

The Imaging Viewing Solution (IVS) mobile application (app) allows U.S. Department of Veterans Affairs (VA) clinicians and other relevant staff to search for and view patients' x-rays, radiology images, and other stored images in Veterans Health Information Systems and Technology Architecture (VistA) Imaging. IVS aggregates images from all VA medical facilities, offering easily accessible diagnostic-grade images, capabilities to work with images (e.g., zooming, rotating, changing viewpoints, measuring) and a tool to collaborate with other VA and non-VA clinical staff.

The IVS App protects Personally Identifiable Information (PII) and Protected Health Information (PHI) as well as the fidelity of the image, ensuring IVS usage is HIPPA compliant and that images cannot be manipulated. **(NOTE: The IVS App should NOT be used for mammography images.)**

1

Logging In

To use the IVS App, you must be a VA health care provider with Veterans Health Information Systems and Technology Architecture (VistA) credentials. You will be required to enter your credentials in order to log in to IVS App.

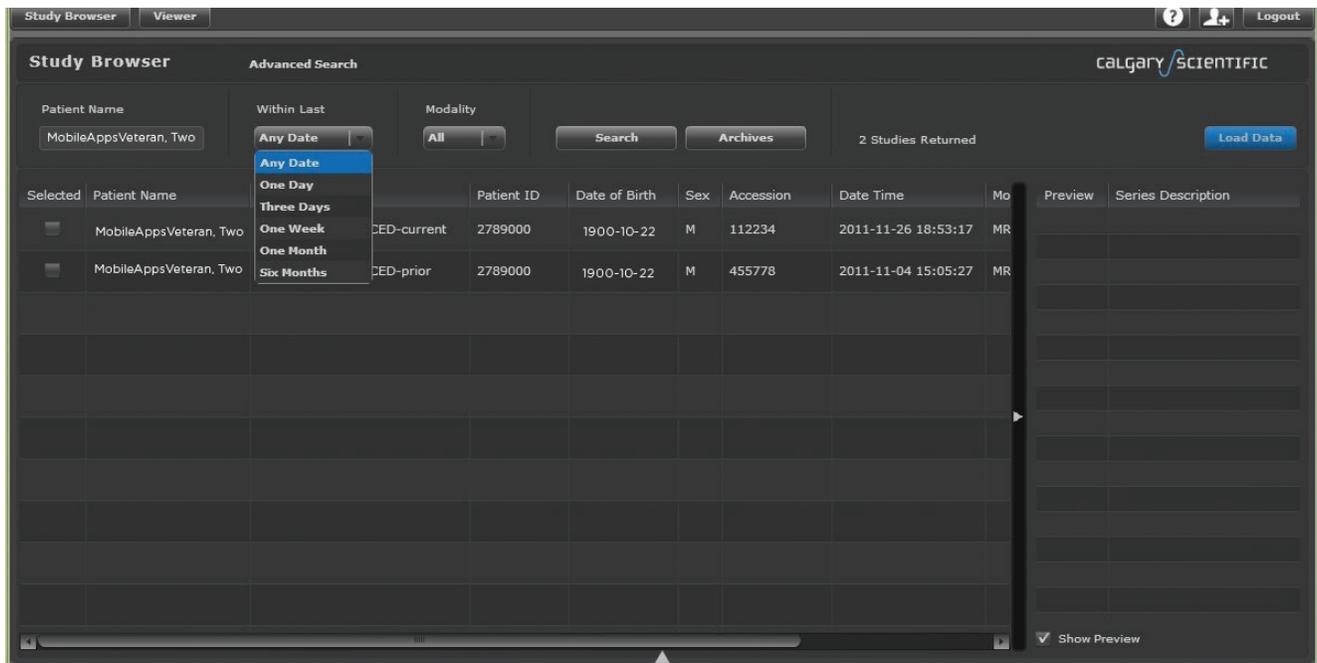
2

Patient Search

Find a patient with either a simple or an advanced search. You can search specific archives or all of VA's databases.

When you log in to the app, the search will default to Simple Search options. Fill out any or all of the criteria (Patient Name, time frame and Modality). Click **Search**.

To find patients using more detailed search fields, click the **Advanced Search** button, which allows you to specify additional search criteria: Accession number, Study Description, Referring Physician, Date Range, and Archives. Click **Search**. Patients whose information matches your search criteria will appear in a list beneath the search fields.

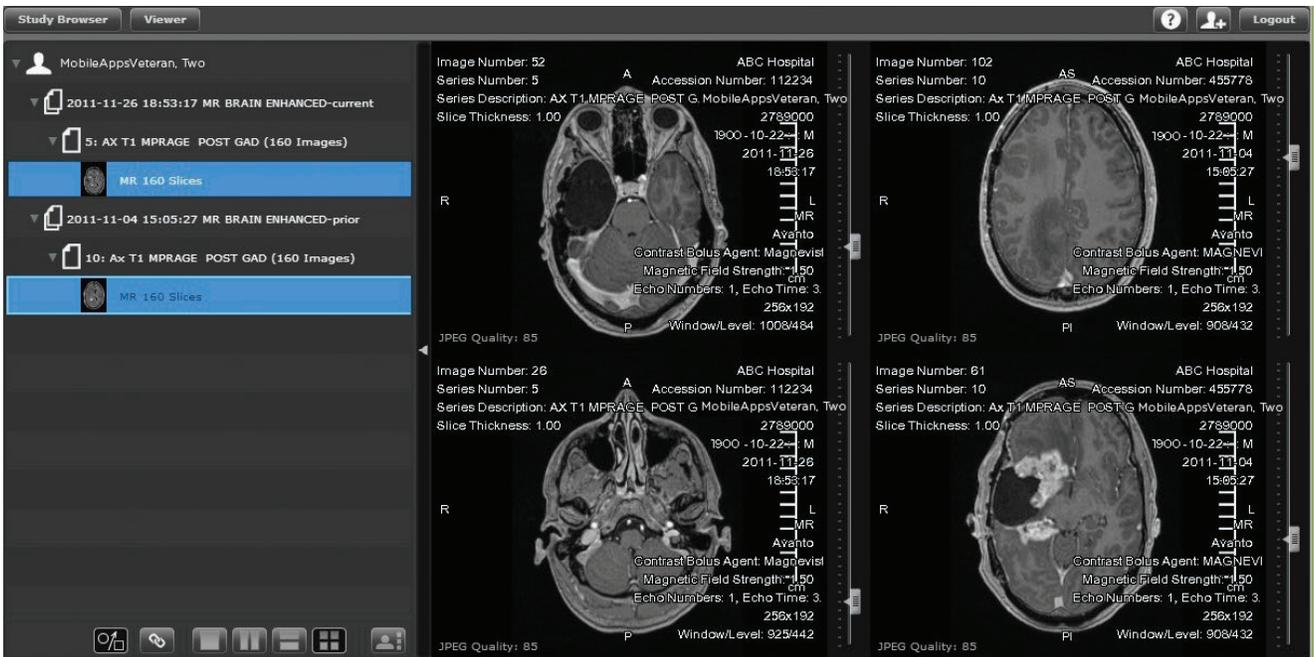


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Image Viewing

You can view a patient's images from different perspectives (2D, MIP/MPR or 3D) as well as work with images in a variety of ways, such as zooming, flipping, highlighting and making notes on an image.

To work with an image, you must first search for a patient in the Study Browser, and then select the image(s) to add to the Viewer. Click the checkbox in the Selected column of the image(s) you would like to view, and then click **Load Data** in the upper right corner of the screen (or double click on the Preview/Series Description). You will go to the Viewer, which shows you the full-size images and provides you with different ways to view them. You can view up to four 2D images at the same time (in a 1x1, 1x2, 2x1 or 2x2 layout), or view images in MIP/MPR or 3D.



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The Menu

The menu allows you to interact with and control the images. To bring up the menu, right click on the image, and a circular pop-up (radial) menu will appear. **NOTE:** Not all menu options are available for every image. Most views allow you to:

- Flip /Rotate (triangle-line-arrow icon) – Click either **Mirror Vert., Mirror Horz., Rotate CW** (clockwise) or **Rotate CCW** (counterclockwise).
- Layout (three square and rectangle icon) – Click either **2D (2x2), 2D (2x1), 2D (1x2), 2D, MIP/MRP** or **3D**.
- Markup (“A” icon) – By clicking **Annotate**, a cursor will appear that you can place in the desired location on the image and type your note. By clicking **Freehand**, a pencil will appear that allows you to draw or write.
- Options (checkbox icon) – You can see details of an image (e.g., image quality or patient information) or access a built-in User Guide, Hotkeys (keyboard shortcuts) legend or About section for additional background.
- Presets (graph icon) – Click the **Select a preset bar**, and click the option from the drop-down menu that allows you to view certain elements or materials within an image.
- Measure (ruler icon) – Depending if you are viewing an image in 2D, MIP/MPR or 3D, you can measure by: Linear, ROI (Region of Interest), Point or Angle.

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2D Images

The 2D view allows you to see and interact with up to four images at one time. When you load images into the Viewer, the view will default to 2D. From the menu, you can select these layouts: 2D (2x2), 2D (2x1), 2D (1x2) or 2D (one image). If you choose to view more than one image simultaneously, left click on the series of images on the left side of your screen, and drag it into the open spaces in the 1x2, 2x1 or 2x2 layout on the right side of your screen. In 2D view, you can zoom in, zoom out, flip/rotate or magnify the image.

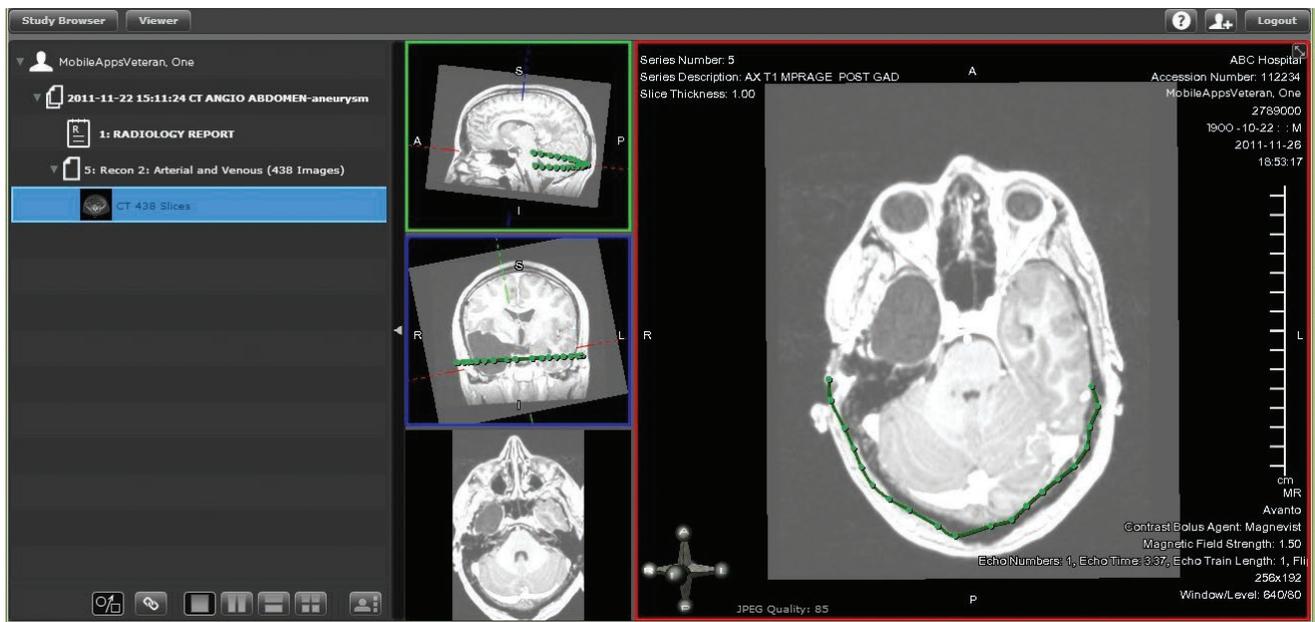
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MIP/MPR Images

The MIP/MPR (maximum-intensity projection/multiplanar reconstruction) view allows you to see and interact with cross sections of 2D images. To view images in MIP/MPR, right click on the image to display the radial menu, click **Layout** and click **MIP/MPR**.

In MIP/MPR view, you will see three small images in a vertical strip on the left, and one large image on the right. The larger image will be a close-up of one of the smaller images. If you click on a small image, the big image will change to be the close-up of the one on which you clicked. Any changes or mark-ups made to one image will be reflected in the other images of the series being viewed.

To manipulate planes or rotate the image, move the two perpendicular positional lines in each of the smaller images, which represent the cross sections or slices you are viewing. To move a plane perpendicularly or in parallel (orthogonally), click on any solid part of the perpendicular positional lines over the image, and hold down and drag up, down, right or left to reposition. To rotate a plane, click on any dashed end of the perpendicular positional lines over the image, and hold down and drag clockwise or counterclockwise to reposition.



While in MIP/MPR view, you can measure volume. From the radial menu, click **Measure**, and click the **Volume** tab. Click and hold your mouse to draw an enclosed shape on at least two different slices. The volume in mm^3 between the two shapes will calculate in the measurement box. You can add more shapes from other slices, which will continue to adjust the total volume.

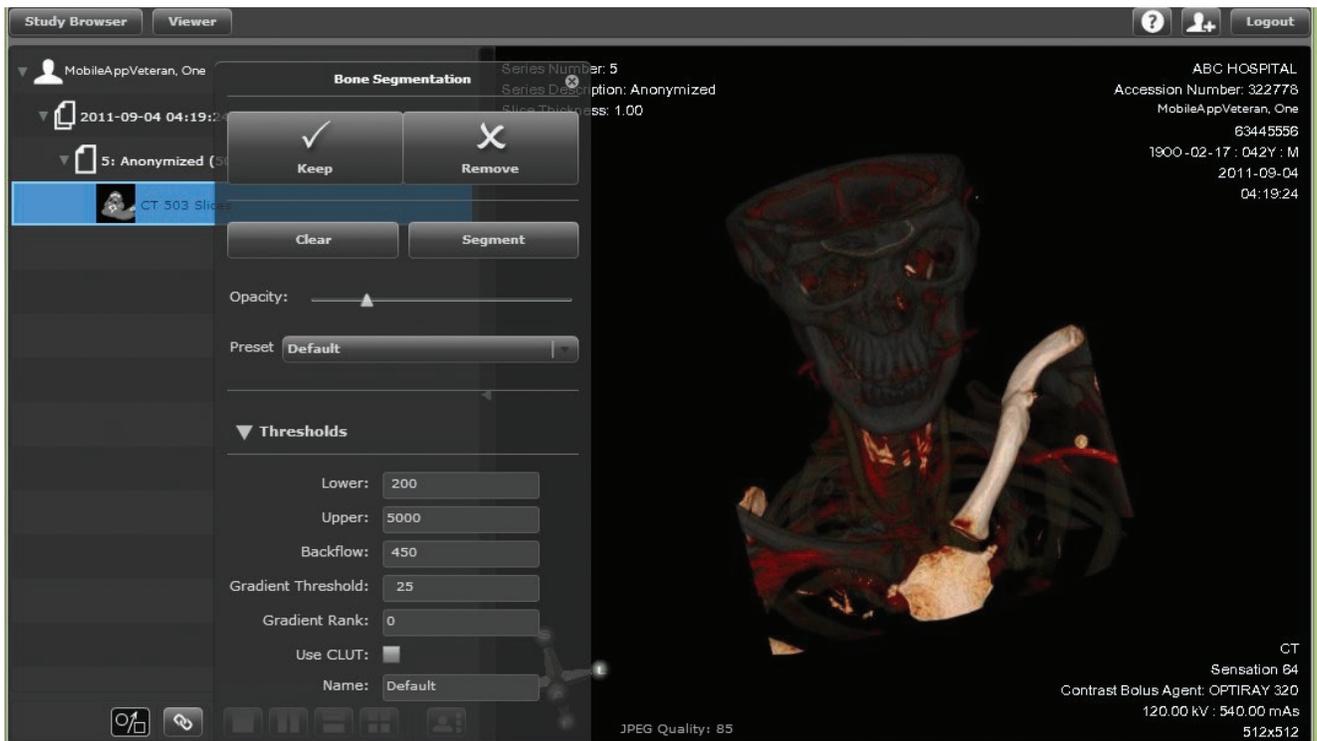
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3D Images

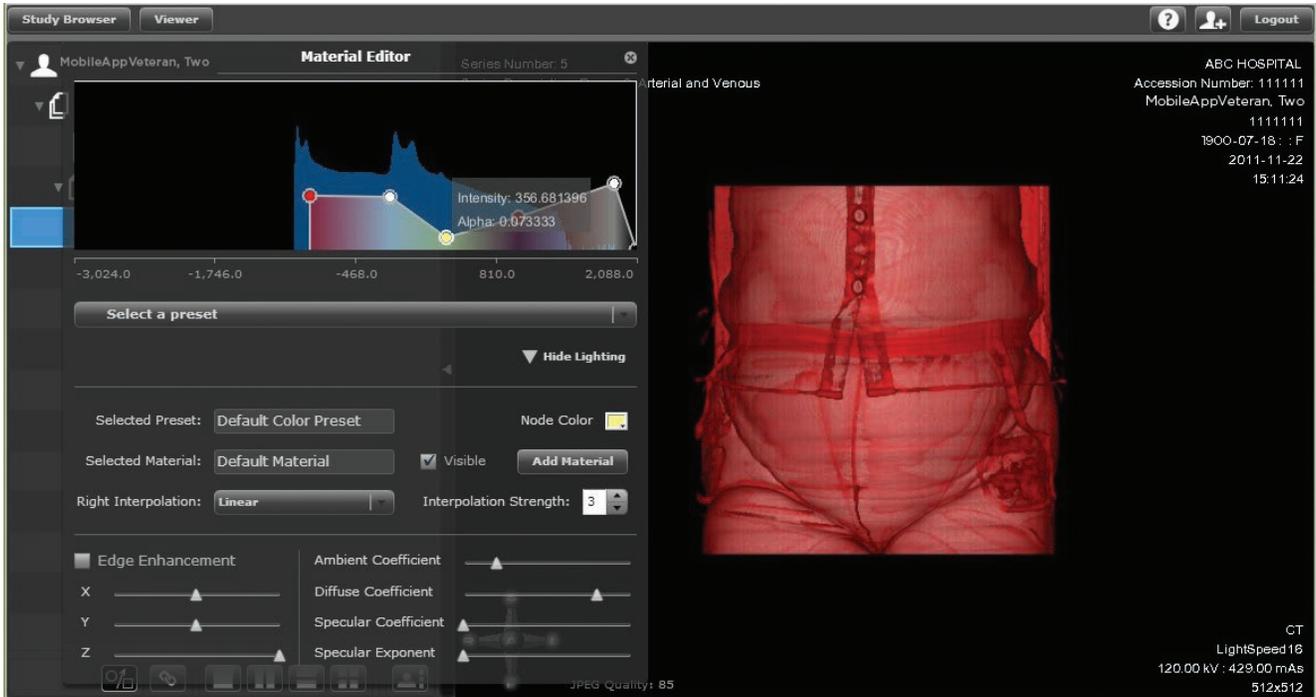
The 3D view allows you to see and interact with images as they would seem in real life. To view images in 3D, right click on the image to display the radial menu, click **Layout** and click **3D**.

3D view offers a segmentation option that allows you to remove material or pieces of an image so that you can focus on one part. From the radial menu, click **Segmentation**, and then choose one of three ways to segment the image:

- Clipping Planes (box icon) – Clipping planes slide into the volume to cut away slices of the image using a box-shaped tool. Position the box around the area of the image by clicking and dragging an edge or corner of the box. To slice away material, click and drag the floating dots on the middle of the box.
- Scalpel (knife/scalpel icon) – The scalpel manually cuts away obscuring anatomy, allowing for a greater degree of precision than clipping planes. Click **Scalpel**, left click, hold and drag the scalpel around the part of the image you would like to cut away. Release your mouse, and hover your mouse over the outlined area so that it is highlighted. Press the **Delete** key.
- Bone Segmentation (bone icon) – Bone segmentation allows you to remove selected materials from the image. Click **Keep**, and click on the material(s) within the image that you would like to keep, click **Remove** and click on the material(s) within the image you would like to remove, and finally click **Segment**. Once you have segmented the image, you can see a shadow of the materials you removed by sliding the triangle along the Opacity bar.



Like 2D and MIP/MPR, you can click **Presets** to view only certain elements of an image. However, the 3D view offers additional options, including a graph/histogram that represents the tones for each pixel of the image. By clicking and dragging the dots on the graph, you can adjust the image.



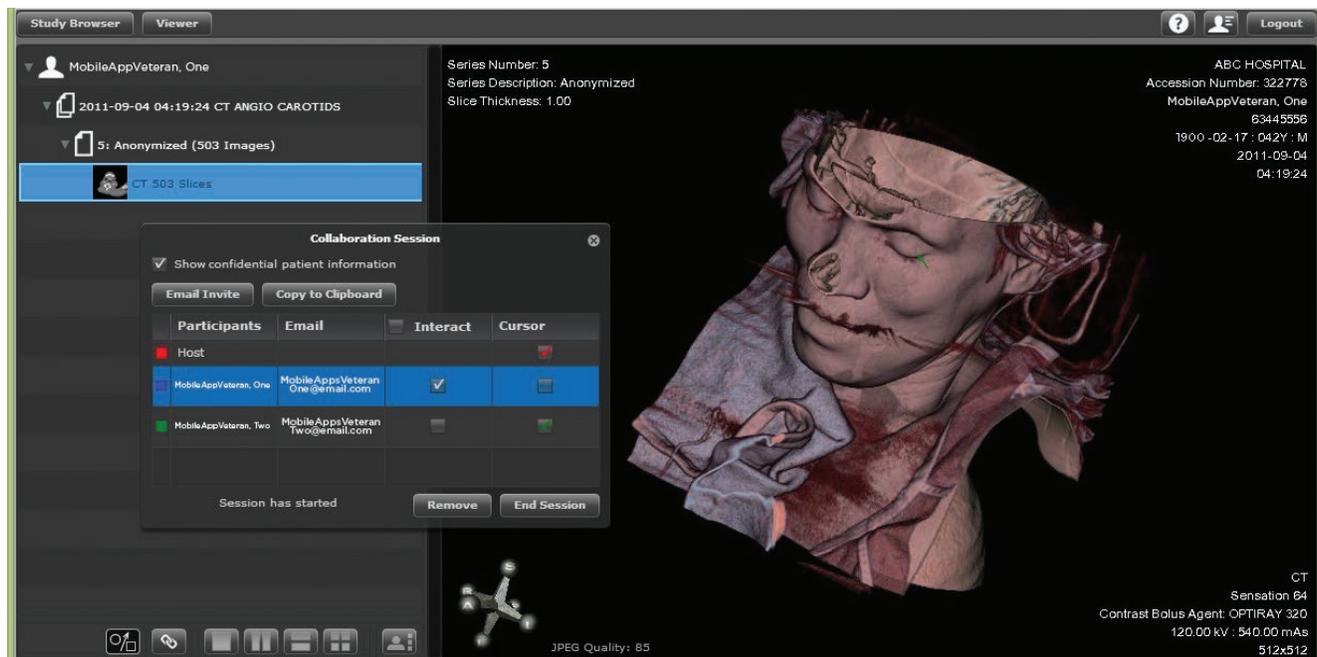
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Collaboration

Collaboration allows multiple physicians to view a patient's images simultaneously and offer feedback. To host a collaboration session, click the **Show Collaboration Dialog** button with the person icon in the upper right corner. From the Collaboration Session pop-up box, you can email invitations for a session.

During a session, as a host you can check the boxes in the Collaboration Session box to choose which participants can interact with or point to images. You can remove a participant by clicking on the participant's name and clicking **Remove**.

NOTE: Once you start a Collaboration session, patient confidential information is automatically hidden. To show this information, check the box next to "Show confidential patient information."



In order to participate in a Collaboration Session, you must have received an emailed invitation for the session. Open the emailed invite, and click the link. Type your name and email in the Participant Info pop-up box, and click **Join**.



Additional Training Materials for the Imaging Viewing Solution App

The app offers a built-in User Guide, Hotkeys (keyboard shortcuts) legend and About background information, which can be accessed by right clicking on an image to display the radial menu, and then clicking **Options**. The User Guide is also accessible by clicking the question mark icon in the upper right corner of your screen.

More resources, such as a User Manual, Slideshow and FAQs, can be found on mobile.va.gov/training.

Help Desk Information

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If you need assistance with the Imaging Viewing Solution App, dial **1-855-500-2025** to speak with a VA representative, or consult IT support at your Department of Veterans Affairs (VA) Medical Center (VAMC). For TTY assistance, dial 711.