

IMAGESCOPE INSTALLATION AND QUICK START GUIDE

This document provides a “quick start” explanation of how to use Aperio’s Release 6 ImageScope software to view digital slides.



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This document provides a “quick start” explanation of how to use Aperio’s Release 6 ImageScope software to view digital slides.

RUNNING IMAGESCOPE

- First you must install ImageScope on your computer. After clicking on the “Get Aperio ImageScope” button and saving the ImageScope.exe installer program to your hard disk, navigate to where you saved the file and double click on the installer program (ImageScope.exe).
 - Select Next/Finish options on any displayed screens as required to install ImageScope.
- Now you are ready to use ImageScope.
 - To open digital slide files on the web (e.g., files found in Aperio’s Digital Slide Gallery), click the “Open with ImageScope” link on the web page. ImageScope will automatically launch and open the file.
 - Launch ImageScope manually from the Start>Programs>ScanScope menu, and then open a digital slide image by selecting Open Local from ImageScope’s File menu.
- Once a digital slide is selected for viewing, ImageScope opens/supports various windows and dialog boxes – described below:

THE MAIN WINDOW

- This window displays a portion of the selected slide at its full resolution.
- You can easily pan by grabbing the Main Window (press the left mouse button and hold down - mouse cursor changes to a fist) and moving it in any direction.
- You can scroll by moving the mouse towards an edge of the window (mouse cursor changes to an arrow) and holding down the left mouse button.
- You can enter joy-stick mode by double clicking the right mouse button while in the Main Window (mouse cursor changes to a diamond-in-square shape). The image will automatically pan in the direction you move the mouse (once in joy-stick mode, press either mouse button to leave the mode).
- You can click on the back button (toolbar’s left green arrow) to return you to a previous view of the digital slide. Clicking on the forward (right arrow) retraces the views. Just like a web browser!

THE THUMBNAIL WINDOW

- This window is accessed via the toolbar’s “picture” button (just to the right of the “magnifying glass” button). It may or may not be displayed according to whether or not it was “open” when ImageScope was last closed.
- When open, it is displayed in the upper right corner, and contains a thumbnail view of the entire slide. A black rectangle that represents the portion of the image that is currently displayed in the Main Window.
- You can quickly navigate to any location on the digital slide, as displayed in the Main Window, by clicking the desired location in the Thumbnail Window, or by dragging the black rectangle to the desired position.
- The Thumbnail Window can be resized by dragging its lower left corner.

THE ZOOM TOOLS

- This tool window is displayed in the upper left corner, and shows the zoom level associated with the Main Window's image.
- The display resolution of the image shown in the Main Window can be changed by clicking on an explicit zoom level, or by clicking and "sliding" the associated slider. In addition, if your mouse supports a mouse-wheel, rolling the wheel causes the zoom slider to move up/down to different zoom levels.
- The size of the black rectangle in the Thumbnail Window changes according to changes in the zoom level. The size increases as you zoom out because a larger region of the slide is displayed in the Main Window.
- Another way to zoom the image is via the zoom button (dotted rectangle w/arrow on the toolbar). First click the zoom button to select it. Then click in the Main Window and hold the left mouse button down to stretch the "zoom rectangle" over an area to be zoomed into. When you "let go" of the mouse button, the Main Window will be zoomed to the area you selected. The Thumbnail Window will show the orientation of the area to the full slide, and the Zoom Window shows the associated zoom level. This tool can be used successively to "drill down" into an image. You can use the back button (green left arrow on toolbar) to return to the original zoom.

THE MAGNIFIER WINDOW

- This window is accessed via the "magnifying glass" button on the toolbar. It may or may not be present according to whether or not it was "open" when ImageScope was last closed.
- When visible, the image displayed in the magnifier window is shown at twice the magnification of the image displayed in the Main Window. The contents of the magnifier window correspond to the region under the mouse cursor in the main window.
- The Magnifier Window can be grabbed (press the left mouse button and hold in - mouse cursor changes to a fist) and moved to any location in the Main Window in order to examine it more closely.
- The Magnifier Window can be resized by dragging its lower right corner.

THE ANNOTATIONS WINDOW

- This window is accessed via the Annotations Window option in the View menu. It may or may not be present according to whether or not it was "open/selected" the last time ImageScope was closed. It is used to describe any annotations associated with the image, where these annotations can be optionally saved/reloaded according to an xml file associated with the image.
- Annotations consist of user-defined regions, rulers, and pointers "drawn" on the image, and are created using the various annotation tools available on the right portion of the tool-bar: the pen, rectangle, ellipse, ruler, and pointer tools.
- In general, all of these tools work the same way. Select the desired tool on the toolbar, place the mouse cursor (shown as a pen) on the desired starting location in the Main Window, and then click and hold in the left mouse button while you move the mouse as required to create the annotation (let go when you get to the desired ending location).
- Annotations automatically "scale" according to the zoom level used to display the image.

- Annotations are stored in “layers”, where an image can have multiple annotation layers, and where a given annotation layer can contain multiple annotations. All the annotations of a given layer are “drawn” in the same color, and the assigned layer color differs from one layer to another.
- The annotations defined for a given layer are displayed on the Main Window according to the “eye” button state. (Clicking the eye button toggles whether the layer is displayed.)
- The Annotations Window can be used to create new annotation layers (“+” button), to delete annotation layers (“X” button), to assign descriptions to annotations, and to assign/modify the colors used for the annotations.

THE ALGORITHMS WINDOW

- This window is accessed via the Algorithm Window option in the View menu. It may or may not be present according to whether or not it was “open” the last time ImageScope was closed. It is used to perform algorithmic analysis on the digital image. This processing can be performed on the entire slide or on selected region(s) of the slide.
- You use the Algorithms Window’s “Change” button to select the desired algorithm. After selecting an algorithm the system sets the default input parameters associated with the algorithm. You have the ability to update those parameters as desired.
- In the Algorithms Window you select the portion of the digital image on which to run the algorithm. You can select the region currently displayed in the Main Window (Current Screen option), the entire image, or the region(s) defined on the currently displayed annotation layer.
- The results of an analysis are displayed in two ways: 1) visually, by “marking-up” the selected portion of the image displayed in the Main Window, and 2) quantitatively, by automatically creating a new annotation layer that contains the results. Markup image generation is optional and selected by a checkbox in the window.
- You can experiment with analysis processing by opening the Algorithms Window and selecting Aperio’s “Positive Pixel Count” algorithm (via the “Change” button). This algorithm demonstrates the analysis capabilities of the Aperio system. Next open the Annotations Window and use the Pen tool to draw one or more regions on the “current” annotation layer. Then select “Selected Annotation Layer” in the Algorithm Window, check “Generate Markup Image”, and click Run to run the algorithm on the regions defined in the annotation layer. When the analysis is complete, the selected regions of the Main Window are enhanced to show the analysis results, and a new annotation layer (as seen in the Annotations Window) is created to store the markup and quantitative results.
- You can examine the results by selecting the “last” layer tab in the Annotations Window. Use the “eye” button to toggle the markup results on/off in the Main Window. Additionally, these results can be exported by using the “export grid to text file” button (small notebook), for example for use with an Excel spreadsheet.
- Note: there are two pen tools on the toolbar, the one on the left is for drawing ordinary annotations, while the one on the right (with the dashed line coming out of it) is for drawing *negative* annotations. Negative annotations are used to define regions where analysis processing should be *skipped*. For example, if this tool is used to draw a small circle inside of a larger circle drawn with the regular Pen tool, then analysis would only be performed on the area between the two circles (a doughnut shaped region).

THE DIGITAL SLIDE CONFERENCING WINDOW

- This window is accessed via the Digital Slide Conferencing Window option in the View menu. It may or may not be present according to whether or not it was “open” the last time ImageScope was closed.
- You use this window to set up a conference between two or more computers. All of the participants in a conference “see” the same digital slide images at the same time (including annotations).

THE DIGITAL SLIDE INFORMATION DIALOG BOX

- You can display digital slide information by clicking on the “image information” button on the toolbar (blue “i”), which causes the Image Information dialog box to open. This window contains general information about the slide, an image of the slide’s label, and the slide’s thumbnail image.

THE IMAGE ADJUSTMENTS DIALOG BOX

- You can control the displayed image colors by utilizing the various options in the image adjustment dialog box - accessible via the Image Adjustment button (slider) on the toolbar. This window contains options to control the brightness/contrast and the color balance, and provides a mechanism to store/load specific color adjustments.

VIEWING MULTIPLE DIGITAL SLIDES

- You can open any number of images in ImageScope and view them side-by-side. You can use the tiling options in the Window menu to arrange the windows when you have multiple images open.
- You can use the synchronize button (the “tree-structure” button on the toolbar) to “sync-up” the display location and magnification level of the opened images. If you select this tool and then pan or zoom in one image, any other open images will also be panned to the corresponding location and zoomed to the same resolution.

VIEWING REMOTE SLIDES

- Aperio has a client/server viewing architecture that enables images stored on a remote server to be accessed across a network or the Internet.
- If you have Internet access, you can attempt to open a slide located on Aperio’s image server.
- Select the Open Remote Image option from the File menu.
- Select “images2.scanscope.com” for the Server and 80 for Port, and press “Connect.”
- Double-click on the Aperio folder to display a list of available images.
- Select an image, click the “Open” button, and view the image as described above.