Aperio eSlide Manager Release 12.3

Notes & News

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Customer Resources

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‣ ImageServer is intended for use with eSlides created by scanning glass slides with the scanner. Educators will use Aperio ePathology software to view and modify eSlides in Composite WebSlide (CWS) format.

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Contents

1 Release Overview

Aperio eSlide Manager Release 12.3 contains a number of new features that improve eSlide Manager usability. This chapter summarizes the changes—for details, see the following chapters.

The purpose of this release is to improve the user experience for customers using eSlide Manager and ImageScope. Extensive consultation with customers provided a list of customer-requested improvements to eSlide Manager to make it easier to use and more compatible with customer workflows.

The areas of improvement fall into these categories:

▶ **Workflow and Usability –** See *"Chapter 2: eSlide Manager User Experience" on page 12* and *"eSlide Manager Network Applications Changes" on page 10.*

▶ **eSlide Viewing –** Many new options are available for eSlide viewing. For more information, see:

- *"Chapter 3: ImageScope Features" on page 17*

- *"Chapter 4: New WebViewer" on page 22*

▶ **Image Analysis –** Substantial changes have been made to make image analysis easier and more intuitive. See *"Chapter 5: Image Analysis" on page 26* for details.

▶ **Aperio Image Analysis Workstation –** The power of Aperio Image Analysis is now available for use on a single workstation. For information on this workflow, see *"Chapter 6: Aperio Image Analysis Workstation" on page 31.*

▶ **Versa Compatibility –** eSlide Manager is now compatible with Versa scanner images. In addition, the new Aperio Image Analysis Workstation provides a simple way to catalog, view, and analyze Versa images on a dedicated workstation. See *"Versa Support" on page 10* and *"Chapter 6: Aperio Image Analysis Workstation" on page 31* for more information.

Other improvements have been made in the areas of security and performance. See *"Security and Performance Enhancements" on page 11.*

> *Microsoft ended support for Windows XP in April 2014. Because the eSlide Manager software infrastructure uses features not supported on Windows XP, eSlide Manager client workstations now require Window 7, Windows 8.1, or later.*

New Look for eSlide Manager Pages

An important feature of this release is the redesign of eSlide Manager pages to provide a streamlined user experience. See *"Chapter 2: eSlide Manager User Experience" on page 12* for details.

Z-Stack eSlides

Using Aperio Scanner Console versions 102.0.3 and later, you can now scan a glass slide in multiple focal depths, creating a three-dimensional eSlide called a z-stack. For information on viewing z-stack eSlides, see *"Z-Stack Image Viewing" on page 19*. For information on analyzing z-stack eSlides, see *"Analyzing Z-stack eSlides" on page 28*.

eSlide Viewing Features and Changes

Important new enhancements have been made to several Aperio eSlide viewers, giving customers a variety of choice and options.

Scanner Image Normalization

Because of different optic and camera components, the microns per pixel of images created by the Aperio ScanScope family of scanners may be different than the microns per pixel for images created by non-ScanScope Leica scanners such as the Versa scanner. This can result in objects within the images created by the different scanners appearing to be different sizes even if in reality they are the same size. The ImageScope viewer now normalizes images to the same microns per pixel. Although this option is on by default, you can turn it off by clearing the **Normalize magnification levels** check box on the General tab of the ImageScope Options window. For details, see the *ImageScope User's Guide*.

ImageScope Changes

Special attention was paid to improving the ImageScope annotation features. For details, see *"Chapter 3: ImageScope Features" on page 17.*

New eSlide Manager WebViewer

The eSlide Manager WebViewer formerly available only in Aperio Network Applications such as Case Assembly, is now available from any eSlide Manager page that contains images. For more information, see *"Chapter 4: New WebViewer" on page 22.*

Opening eSlides from eSlide Manager

The way you open eSlides in WebViewer and WebScope depends on whether you have ImageScope installed, and which viewer you set as your Default Web Viewer. See *"eSlide Manager Administrative Changes" on page 10* for information on setting the default viewer.

If you are using ImageScope, there are no changes. To open one eSlide image, click the thumbnail image of the eSlide. To open multiple eSlide images, select the check boxes next to the eSlide Images, and click **View Images**.

Opening eSlides in the New WebViewer

You can open one or more specific eSlide images, or all of the eSlide images for a case or project.

To open	Do this
All eSlides in a case, project, or lesson	From a Case, Project, or Lesson list page, click the 👁 that appears in the left column of the case or project to open all.
One or more eSlides from the eSlide List page	If ImageScope is *not* installed and WebViewer is the default viewer, then you do not need to press the W key when opening eSlide images. • To open one eSlide, press and hold the **W** key (default viewer) *or* the **A** key (alternative viewer), and click the thumbnail image of the eSlide. • To open multiple eSlides, select the check box next to each eSlide image you want to open. Press and hold the **W** key (default viewer) or the **A** key (alternative viewer), and click **View Images**.

The WebViewer opens in a separate browser tab, with the selected eSlides images loaded in the eSlide tray.

Opening eSlides in WebScope

When following the instructions below, if ImageScope is *not* installed and WebScope is the default web viewer, then you do not need to press the W key when opening eSlide images.

To open	Do this
One eSlide image	From the eSlide list page, press and hold the **W** key (default viewer) or the **A** key (alternative viewer), and click the thumbnail image of the eSlide.
One or more eSlides from the eSlide List page	• To open one eSlide, press and hold the **W** key (default viewer) *or* the **A** key (alternative viewer), and click the thumbnail image of the eSlide. • To open multiple eSlides, select the check box next to each eSlide image you want to open. Press and hold the **W** key (default viewer) or the **A** key (alternative viewer), and click **View Images**.

Image Analysis Enhancements

Extensive redesign of the ImageScope image analysis user interface makes image analysis easier and quicker with fewer mouse clicks. See *"Chapter 5: Image Analysis" on page 26* for details.

Versa Support

eSlide Manager now supports the SCN images created by the Versa scanner, including multi-region images.

In addition, Aperio Image Analysis Workstation is available to catalog, manage, view, and analyze Versa eSlides on a single workstation. For details, see *"Chapter 6: Aperio Image Analysis Workstation" on page 31.*

eSlide Manager Administrative Changes

With the introduction of WebViewer as a web-based eSlide viewer available from all eSlide Manager pages that contain eSlides or specimen images, two web-based viewers are now available: WebViewer and WebScope. The eSlide Manager administrator can choose which web-based eSlide viewer to make the default.

To select which web-based viewer will be the default:

1. Log into eSlide Manager as an administrator.

2. Go to the **Administrative** menu and select **System Settings**.

3. Select which web-based viewer you want to be used by default by selecting a viewer from the **Default Web Viewer** drop-down list in the System Settings section.

See *"Opening eSlides from eSlide Manager" on page 9* for details about opening eSlide images in the different viewers.

eSlide Manager Network Applications Changes

The eSlide Manager Healthcare Network Applications are now called the eSlide Manager Network Applications. Some of the new user interface enhancements included in the general eSlide Manager pages are also included in the eSlide Manager Network Applications.

User Experience Enhancements

New features include:

‣ **Move Columns** – Users can drag columns to new positions.

‣ **Show/Hide Columns** – New icons at the bottom of Case pages allow the user to hide columns or reset column visibility to the default.

‣ **Number of Attachments Column** – A new column labeled **#At** on the application grid lists the number of attachments associated with a case.

‣ **Optional Auto Case Assignment** – The Case Review Admin page now contains a drop-down list to define the actions that will occur when a user opens a case that is assigned to a group:

  • Prompt the user to open the case for read-only access or assign the case to the user

  • Open the case read-only

  • Automatically assign the case to the user

▶ **Search as Start Page** – On the My Settings page, the user can set his or her eSlide Manager start page to the Network Applications Advanced Search page.

Security and Performance Enhancements

To provide state of the art security to the eSlide Manager site and to enhance performance, this version of eSlide Manager has been updated to include new infrastructure components:

▶ Apache Webserver version 2.4.12

▶ PHP 5.6.7

▶ OpenSSL 1.0.1m

▶ SQLServer 2014

▶ 64-bit Aperio ImageServer is now the default

2 eSlide Manager User Experience

This chapter discusses new features that make eSlide Manager easier to use and that make it more compatible with customer workflows.

New Look to eSlide Manager

The first thing you will notice when you log into eSlide Manager is a new, cleaner look to the pages. Many of these changes were in response to customer requests, and in general they provide a streamlined, easer to use workflow by reducing mouse clicks and scrolling.
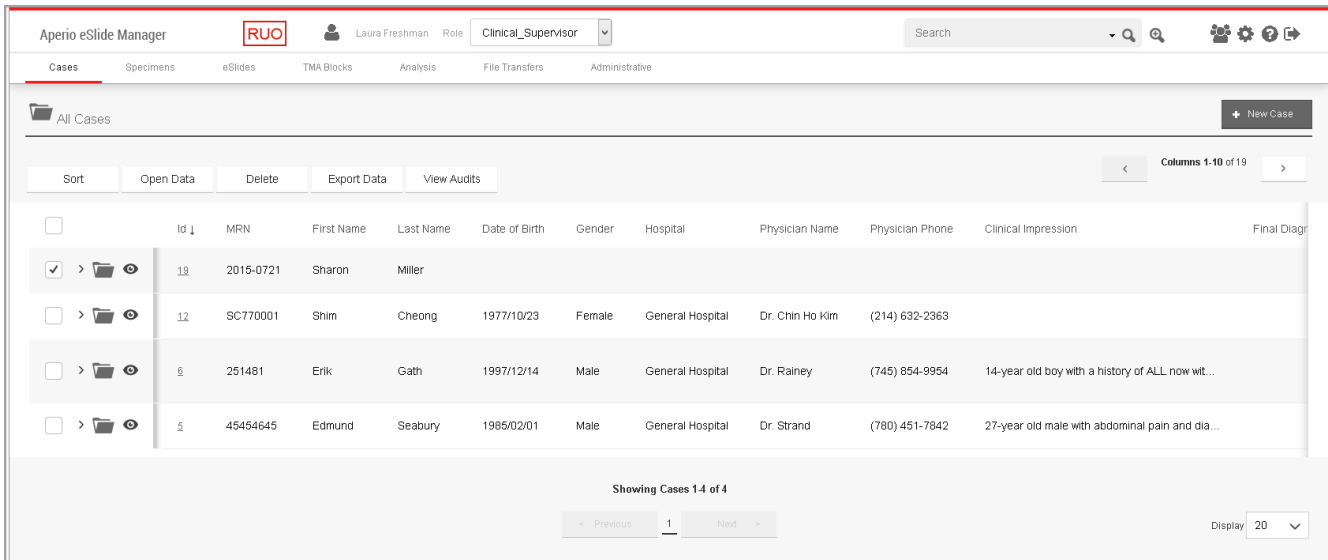
The following sections discuss some of the changes to eSlide Manager pages.

Easier Navigation on List Pages

Quite a lot of data can be displayed on eSlide Manager list pages, which could result in a lot of scrolling to see all of the data. Several changes were made to limit scrolling:

▶ Columns are now accessed by selecting pages instead of scrolling to the right.
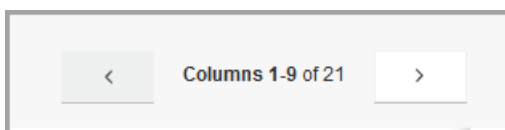
▶ The leftmost pane, which contains important selection and viewing options, is frozen in place so it is always visible.
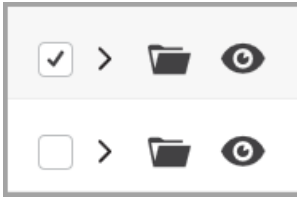
This column contains two new icons:

- ❯ — Expands to show a preview of important information from the item's details.
- ◉ — Opens any associated eSlides in the eSlide tray and WebViewer.

Detail Page Viewing

Based on the web browser window size, data is now presented in two or three columns, so that all data is easily viewable.

Each detail section on the page contains summary information on the item being displayed:

∨ Case Details   Case Acc#: LIV15   Last Name: Moore   MRN: 000432
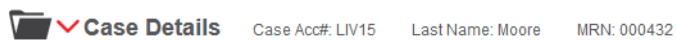
Each section of the Details page can be expanded or collapsed to make it easier to see all information on the page. The image below shows the Specimen Details section of a Case page expanded.

∨ Specimen Details				
All Specimens				
Sort	View Images	Open Data	Delete	Unassign	Move
Add New eSlide	Add Existing eSlide			
✓	Id ↓	Specimen Acc#	Procedure	Body Site
✓ ❯	2	SPLIV14-002	Liver Biopsy	Liver
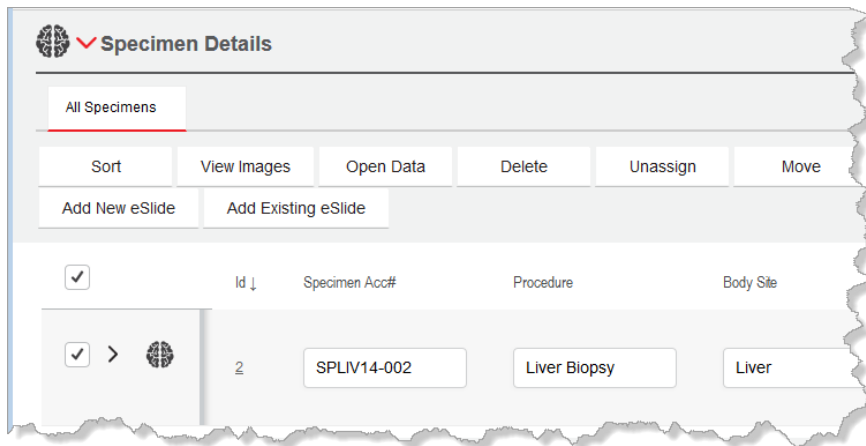
To expand a section, click ❯ in the section title; to collapse it, click ∨.

As you select additional items within the section (such as selectingmultiple specimens), each item appears in a tab in that section:
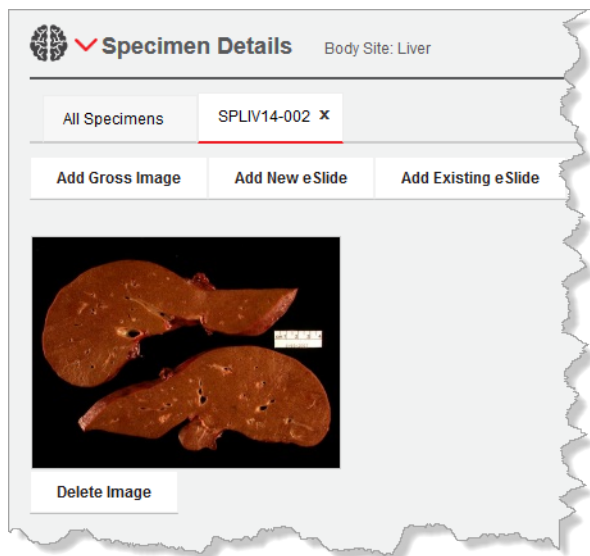
Saving Data on Detail Pages

Whenever a user changes data on a Detail page, a Save/Cancel panel floats on the page so it is always accessible:
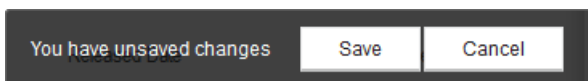
User-tagged Data (TAG Column)

The TAG column on eSlide Manager list pages allows users to associate a text tag with items on the list page. Items can then be sorted by the tag on the list page or tags can be searched for in Advanced Search. By default, the TAG column is not visible, but the eSlide Manager administrator can make it visible by editing a data table.

Easy Access to Settings and Help

New settings are grouped together at the top-right corner of the page:
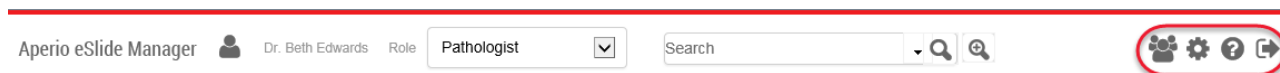
The new settings are described below:

Conference Settings – The new WebViewer contains a Conference feature. Click here to set your conference availability.

Settings – This icon performs the same function as the My Settings command.

Help – Click here to see help information on the current page.

Logoff – Click here to log off eSlide Manager.

Search Enhancements

This new version of eSlide Manager includes enhancements for displaying free-text search results. Additionally, you now have the option of setting the Advanced Search as your eSlide Manger start page.

Enhanced Search Results

When you perform a free-text search, the search results appear in context using the active hierarchy (Clinical, Research, or Educational).

From the Search Results page, you can:

▸ Click the corresponding icon to go to the case 📁, specimen 🧠, or eSlide ✎ where the search term appears.

▸ If you have more than one page of search results, use the **Previous** and **Next** buttons at the bottom of the page to view different pages.

▸ Use the **Display** drop-down list at the bottom of the page to set the number of results that appear on each page.

▸ Refine your search results by typing new search criteria in the **Search** box, and clicking **Search**.

Setting Advanced Search as Start Page

Customers who want to start their eSlide Manager sessions with the "Advanced Search" page can now set Advanced Search as their start page. To do this, go to the eSlide Manager **Administrative** menu, and select **My Settings**. Go to the **Spectrum Start Page** drop-down list, select **eSlide Manager Advanced Search** (or select one of the eSlide Manager Network Applications Advanced Search Pages) and click **Save**.

Image Display Enhancements

In the previous release, the default display behavior was to show an enlarged version of a thumbnail image when moving the cursor over an eSlide or specimen image on an eSlide Manager page. Customers may now choose whether or not to see this popup enlargement:

1. Go to the **Administrative** menu and select **My Settings**.

2. Select or unselect the **Display Hover Popups for Images** check box, depending on the behavior you want.

New Web Viewer

Customers responded positively to the Viewer that was provided as part of the Aperio ePathology Network Applications. A version of this viewer has now been made available in eSlide Manager along with a digital slide tray. For details on this viewer, see *"Chapter 4: New WebViewer" on page 22.*

> *If you have been using the legacy Web Viewer, WebScope to view and analyze eSlides, note that the new WebViewer does not yet support image analysis, and you will want to continue using WebScope or ImageScope if analysis is part of your workflow.*
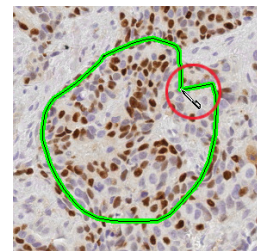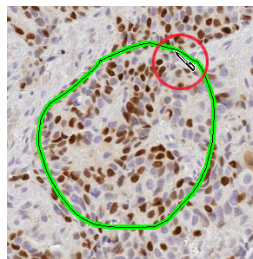
3 ImageScope Features

Significant changes have been made to ImageScope.
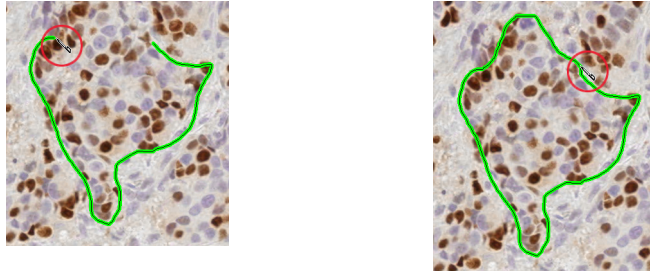
New Annotation Features

New annotation features include:

Feature	Description
Behavior change for active annotation tools	A change was made so that the selected annotation tool remains active until you select a different tool from the toolbar. For example, if you are using the Pen tool to draw multiple free-form annotations, you select the Pen tool once and draw all of your annotations. In previous versions of ImageScope, you had to re-select the annotation tool after each use.
Changing a free-form annotation	This feature enables you to redraw free-form annotations created with the pen or negative pen tools. You cannot redraw an annotation if you have run analysis on it. 1. With the annotation selected, place the Pen tool where you want to start redrawing 2. Hold down the left mouse button while slowly dragging the line in the direction you want to adjust the shape. 3. Release the mouse button when you have finished. You can use this feature to change the shape of an existing annotation, as shown below:

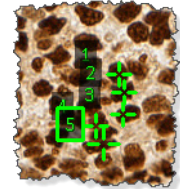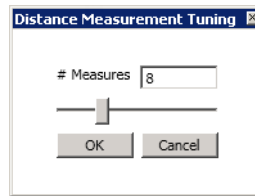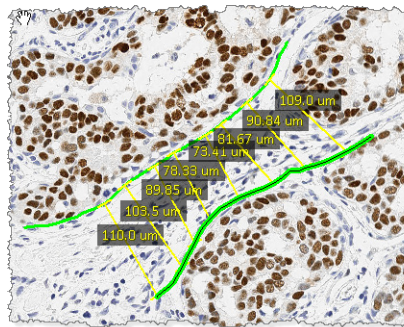| Feature	Description
	You can also finish an incomplete annotation, as shown below. For more details, see the *ImageScope User's Guide.*
Copying and pasting annotations	Select the annotation you want to copy, and click 📋. Click 📋, and then click to place the annotation in the same or a different eSlide image. If you have run analysis on the annotations, only the shape (region) is copied.
Marking the eSlide image with numbered annotations (counters).	With the Counter tool **#** selected, click to mark the eSlide image with a numbered annotation. Counters are numbered automatically in the order they are placed. Counter are stored in the annotation layer, along with their x/y coordinates. Each annotation layer can contain a separate set of counters.

Feature	Description
Measuring the distance between two line annotations	Follow these steps to use the new Distance Measurement tool to measure the distance (in microns) between two free-hand line annotations.

<table>
<tr><td></td><td>
1. Select the first annotation and click .

2. Select the second annotation to create an initial set of measurements set at equidistant points.

3. When the Distance Measurement Tuning window appears, change the number of measurements or accept the default number (8) by clicking **OK**.

Measurement lines are placed equidistantly within the relevant area, as shown in the example below:

The measurements are stored in the Annotation layer.
</td></tr>
</table>

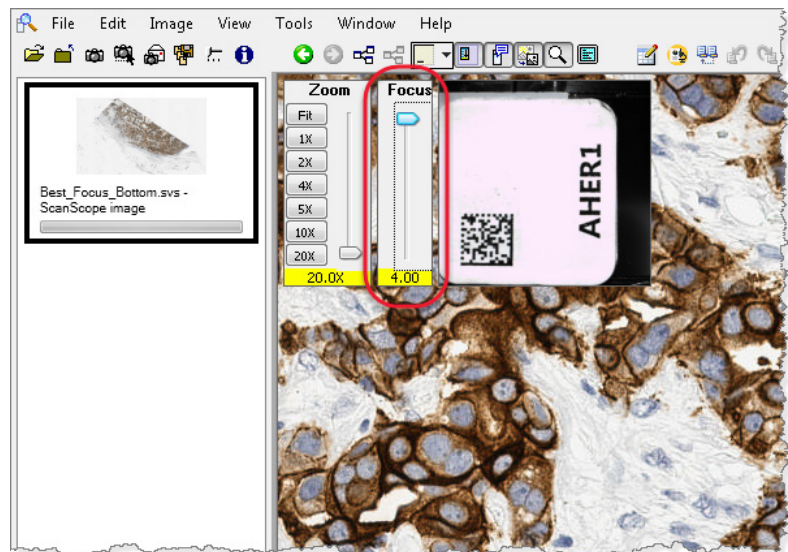| Feature	Description
Copy and Paste Layer Attributes or Layer Region information	From the Annotations – Detailed View window, select one or more cells from the Layer Attributes or Layer Region grids, and press Ctrl+C to copy the information to the Windows clipboard. Press Ctrl+V to paste the information into Word or Excel.
	Note that the column headings are automatically copied over with the cell information.

Z-Stack Image Viewing

The Aperio scanner can create multiple digital images of slide tissue scanned at different focal depths, creating a 3D image that you can visually navigate through much as a microscope user can navigate through different tissue focal depths by using the microscope objective fine and coarse adjustments. This ability to create a 3D image is called "z-stack scanning."

ImageScope automatically opens a z-stack image to the best focused layer, as determined by your Aperio scanner when the slide is scanned. The number of layers and the layer separation (depth, in microns (µm), between the layers) is set during scanning. For more information on scanning z-stack images, see the Console User's Guide for your Aperio scanner.

When you open a z-stack image, the Focus slider appears in the ImageScope window, as shown below.

You can use the Focus slider to view different layers of the z-stack image. The number at the bottom of the slider represents the current focus point.

Annotating Z-Stack Images

Before you draw annotations on a z-stack image, adjust the Focus slider or select an existing annotation region so that the desired z-stack layer is active. Although annotations are visible from all z-stack layers, annotations are stored on the z-stack layer on which they are drawn.

For information on configuring and scanning z-stack images, see your Console User's Guide for Console versions 102.0.3 and later.

Copy and Paste Layer Attributes or Layer Region Information

Select one or more cells from the Layer Attributes or Layer Region grids in the Annotations – Detailed View window, and press Ctrl+C to copy the information to the Windows clipboard. Press Ctrl+V to paste the information into Word or Excel.

Note that the column headings are automatically copied over with the cell information.

Image Analysis Algorithm Tuning

Image analysis algorithm tuning and registration in ImageScope has been streamlined for ease of use. For details, see *"Chapter 5: Image Analysis" on page 26.*

Japanese Translation

A preliminary version of ImageScope is now available in which menu items and commands have been translated into Japanese.

4 New WebViewer

The WebViewer, which is similar to the viewer in the Aperio Network Applications and Aperio PeerReview, is now available for use directly from eSlide Manager.

The WebViewer enables you to navigate and annotate eSlide images. The conferencing feature allows you to host a conference, where you can share eSlide images with colleagues who work in your eSlide Manager location.

Using the WebViewer

When you open one or more eSlide images, they appear in the WebViewer window, as shown below.

eSlide Tray   Viewer window
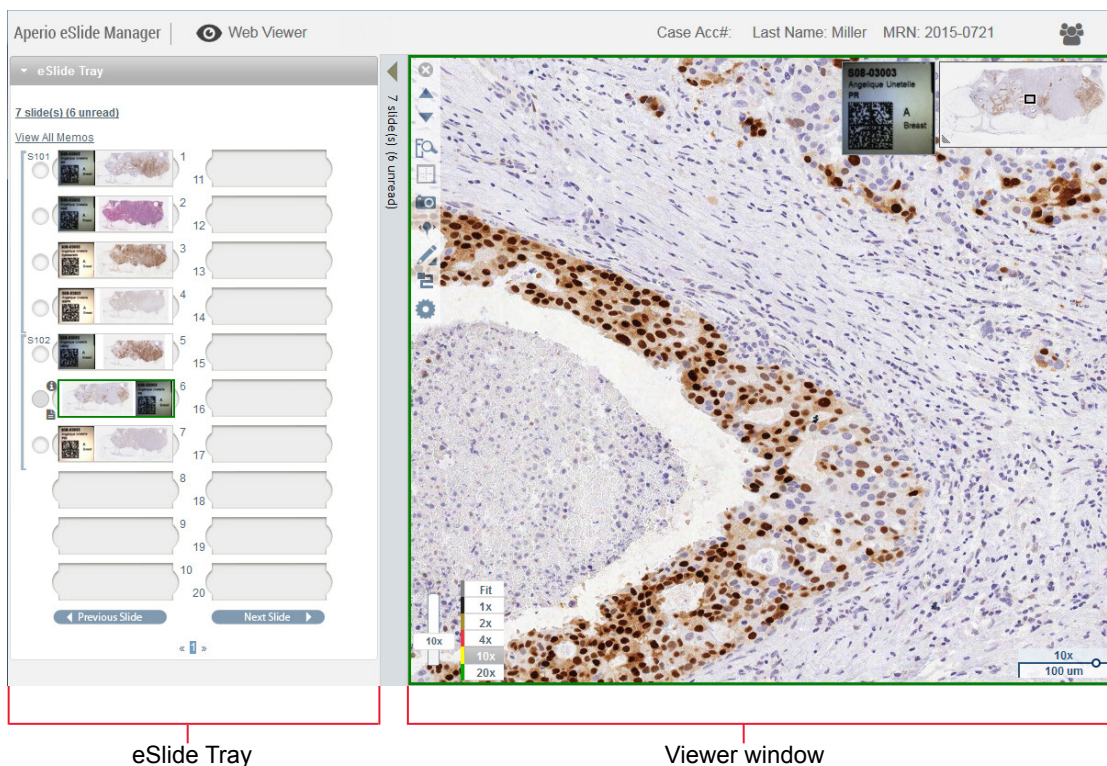
The two main areas are the eSlide tray and the Viewer window:

▶ **eSlide tray** – The eSlide tray provides a simulation of the tray pathologists use to organize their glass slides. If you opened multiple images (a case or project, or a set of selected images), they appear in the eSlide Tray. See *"Using the eSlide Tray" on page 23* for more information.

▶ **Viewer window** – The Viewer window is where you work with your eSlide images. See *"Using the Viewer Window" on page 24* for more information.

Using the eSlide Tray

Depending on whether you opened eSlide images from a case or project details page or the eSlide list, the eSlide Tray can contain the following:

▶ All eSlide images from a case or project.

▶ All selected eSlide images.

The following example shows the different parts of the eSlide Tray.
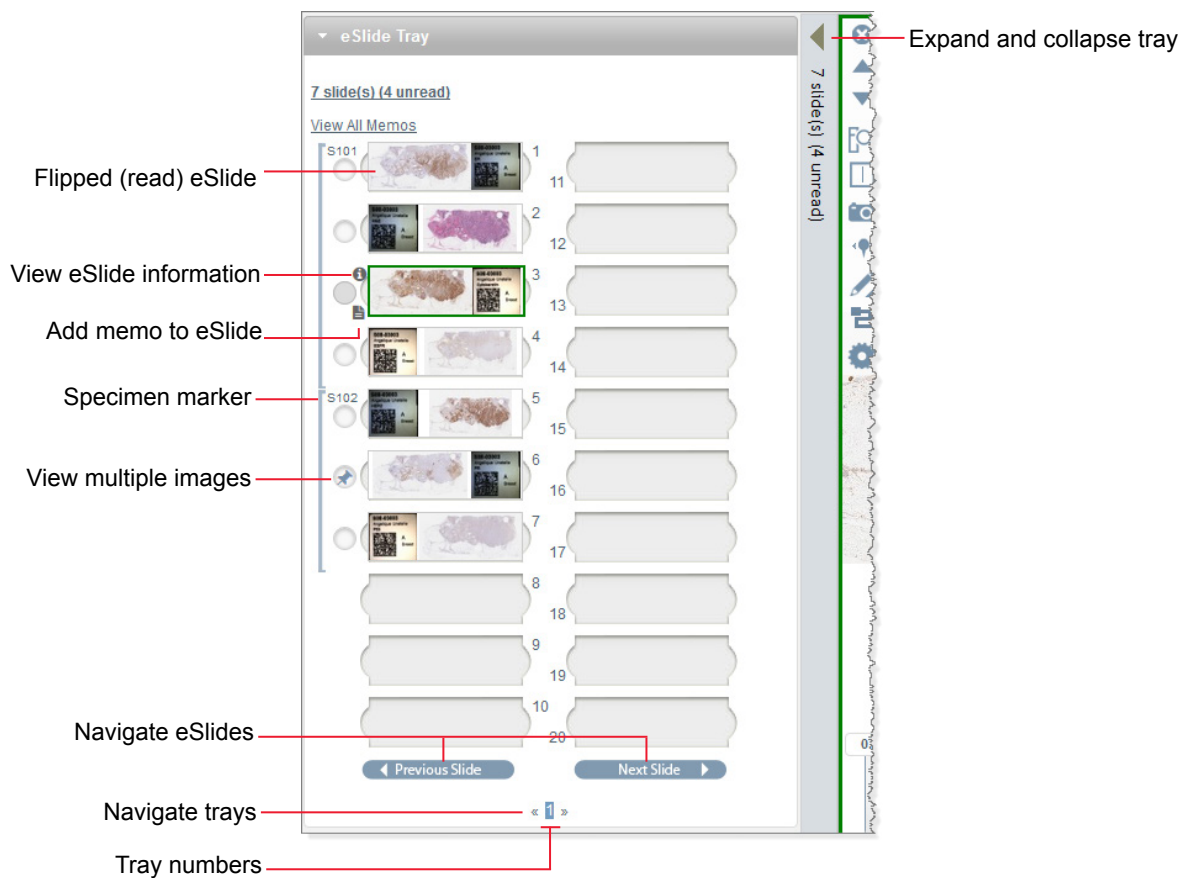

You can perform many actions from the eSlide tray, including:

▶ Selecting an eSlide image to view.

▶ Flip an eSlide horizontally to mark it as read or unread.

▶ Navigate through multiple eSlide images and multiple eSlide trays.

▶ Move eSlides around in the tray.

For more details on using the eSlide tray, see the *eSlide Manager Operator's Guide*.

Using the Viewer Window

The Viewer window is where you view and annotate eSlides.
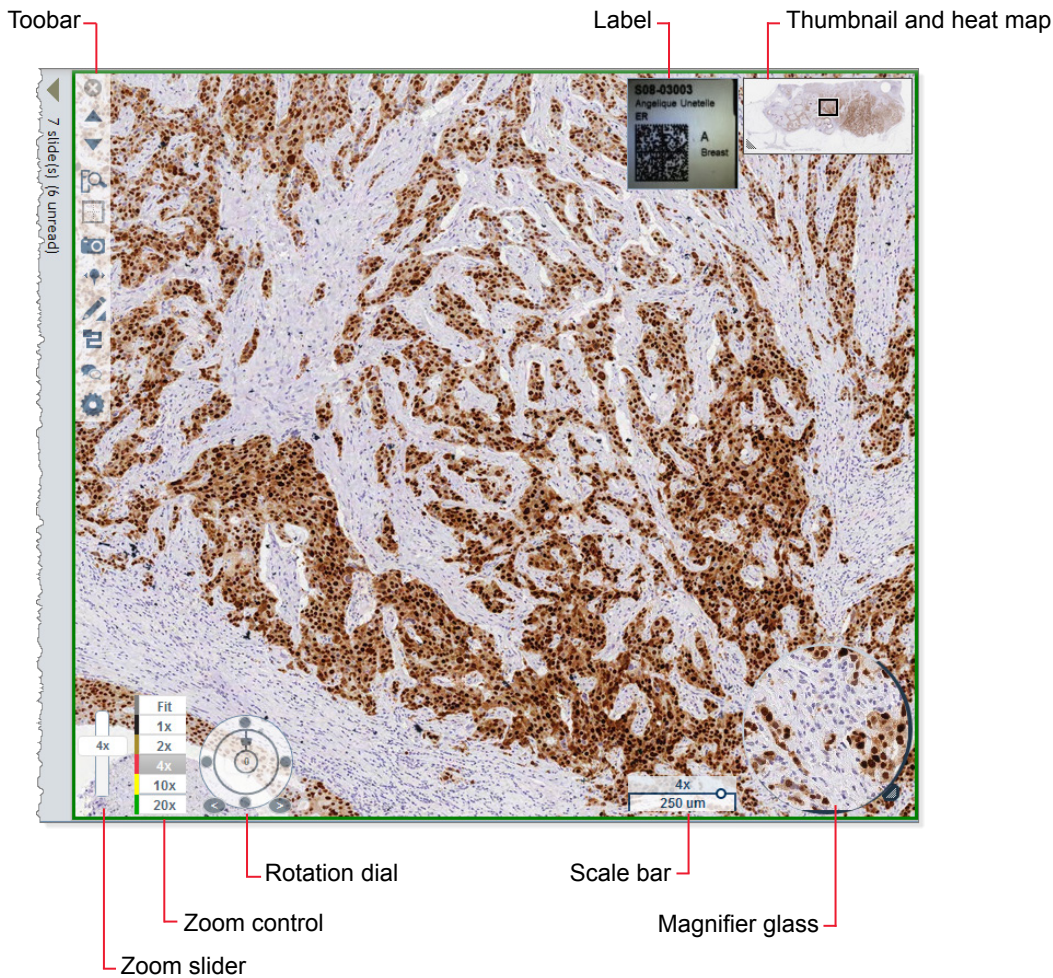
Some tasks you can perform from the Viewer window include:

▶ View the eSlide using one of the many navigation and zoom tools available.

▶ Take a snapshot of the current view.

▶ Display multiple images in the window.

▶ Use the raster scan and heat map to track the viewed areas of the image.

▶ Add and manage various types of annotations.

▶ Start a conference, where you can share eSlides with colleagues who are in your eSlide Manager location.

For more details on using the WebViewer, see the *eSlide Manager Operator's Guide*.

Conferencing

With the new WebViewer, Conferencing is now available from eSlide Manager. The Conferencing feature is similar to those currently available in the eSlide Manager Network Applications and PeerReview.

Conferencing enables colleagues working on the same eSlide Manager or eSlide Manager Network Applications location to share an eSlide. During the conference, the host can share eSlide images and navigate to areas of interest. Conference participants can view the same image as the host, use the chat feature, and request control of the navigation. For more details on using the Conferencing feature, see the *eSlide Manager Operator's Guide.*

5 Image Analysis

After listening to our customers, image analysis algorithm tuning has been streamlined and made easier to use.

Image analysis within ImageScope has been completely redesigned to reduce the number of mouse-clicks to perform each step and to make the process more intuitive. In addition, several image analysis algorithms have been redesigned to make them easier to use.

This chapter shows a preview of the new image analysis workflow, but for details on using the new image analysis system, see:

▶ *Aperio Image Analysis User's Guide*

▶ *Aperio Image Analysis Workstation User's Guide* (if using the Aperio Image Analysis Workstation configuration— see *"Chapter 6: Aperio Image Analysis Workstation" on page 31* for more information on that configuration.)

Tuning Algorithm Parameters

It is now simple to switch between tuning an algorithm and using the algorithm macro to analyze an eSlide. In addition, you can now tune the algorithm using multiple eSlides without closing and saving the macro you are testing.

The simplified algorithm tuning workflow reduces the number of screens and user interaction required to accomplish analysis tasks. Here are the steps to create a new macro or modify an existing macro from eSlide Manager:

1. Log into eSlide Manager with administrator privileges.

2. After opening an eSlide in ImageScope from eSlide Manager or the Aperio Image Analysis Workstation, go to the ImageScope **View** menu and select **Analysis** or click the new icon on the ImageScope toolbar. You see the Analysis window.

3. Click the **Choose Algorithm** drop-down list and choose an algorithm to create a macro for.
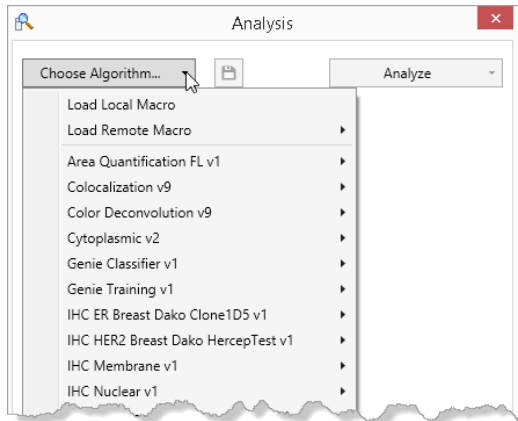
4. When selecting an algorithm, you can choose to create a new macro by selecting **Default Settings** or can choose to modify an existing macro for that algorithm by selecting **Load Remote Macro**.
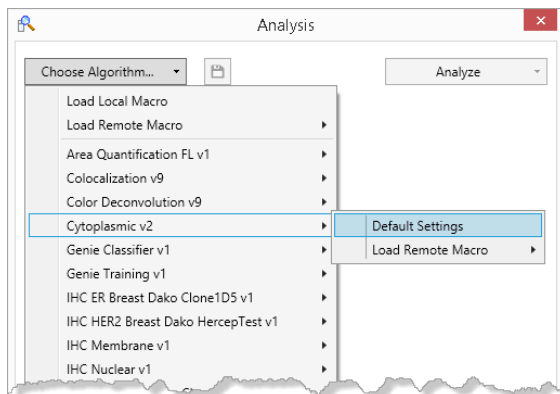
Or, to choose from the entire set of macros, click **Load Remote Macro** from the top of the list. When loading a macro you can click **Filter** on the macro selection screen to see several options for narrowing down the list of macros to choose from.

Once you have loaded a macro or the default settings for an algorithm, you see the algorithm parameters and can begin to tune the parameters.
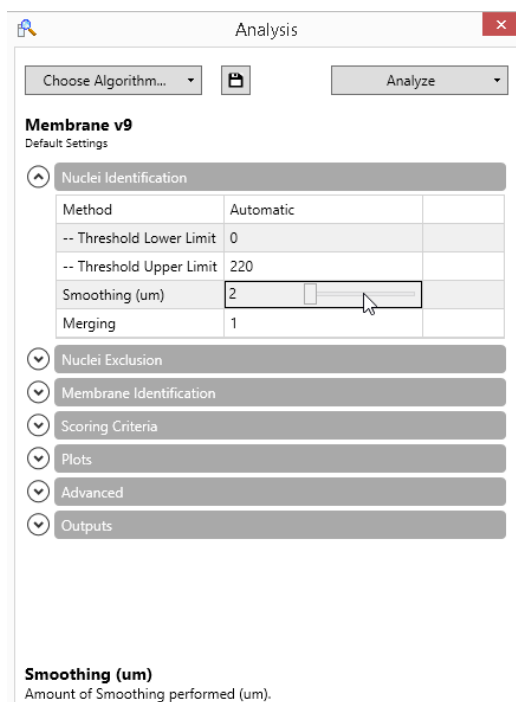
See the user guides for the individual algorithms for information on adjusting their parameters.

When clicking [save icon] to save the macro, you can choose whether to save it on your workstation or on eSlide Manager.

When opening an eSlide directly from your workstation or local network, you will only be able see algorithms installed on your workstation and work with macros that were saved on your workstation.

Performing an Analysis

Refer to the previous section for examples of the new analysis user interface. After opening an eSlide in ImageScope, it is now easy to find and load a remote macro (a macro that resides on eSlide Manager) or a local macro (one that resides on your workstation).

Then click the **Analyze** drop-down list and select an analysis option to begin the analysis.

Analyzing Z-stack eSlides

Aperio Scanner Console software versions 102.0.3 and later now allow you to scan a glass slide in multiple focal depths. This image is called a *z-stack*.

When viewing the three-dimensional z-stack eSlides in ImageScope, you use a Focus slider to move between the different layers. When you stop on a layer and draw annotations, and then analyze those regions, the analysis is for the specific layer you are located on.

Although the analysis results apply only to that layer, you will be able to see the annotations and analysis results on any layer of the image. If you double-click on the annotation layer in the Annotations window, ImageScope moves the display to the layer you drew the annotations on, and displays the annotations centered on the window.

If you are performing whole-slide analysis on a z-stack eSlide, the analysis is done on the Best Focus Layer as determined in the z-stack layer setup in the Console before the slide was scanned.

Automatic Stain Color Finder

With this release, an automatic stain color finder feature is now used by the Nuclear and Cytoplasmic algorithms. (In the future, additional algorithms will also make use of this feature.)

The stain color finder feature locates the most unmixed pixels from each stain in the Algorithm Tuning window, providing automatic color deconvolution. By default, for compatibility reasons, this feature is turned off so that the algorithm uses the same default color values as previous versions of this algorithm.

To use this feature for each stain:

1. Move the Algorithm Tuning window to an area where the stains are well separated.

2. Set the Number of Visible Stains for the number of stains visible in the area of the slide shown in the Algorithm Tuning window. (This may be fewer than the total number of stains shown on the entire slide.)

3. Set the Color parameter to **Train**. The algorithm computes the color values and the corresponding stain mark-up image is shown in the Algorithm Tuning window. These values are computed then saved as the default.

4. Set the Values parameter to **Show**. You see the numeric values for the stain colors.

5. Set the **Target** to the appropriate value to adjust the stain color values for that stain.

Repeat these steps for the other stains shown in the Algorithm Tuning window.

If you know the exact color vector numbers (from previous experience with the stain, for example), you can type the numbers directly into the Values parameter rather than having the algorithm calculate them.

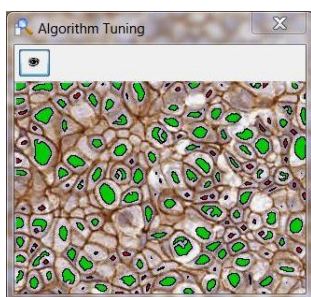# Membrane, Nuclear, and Cytoplasmic Algorithms Redesigned

Three of the Aperio image analysis algorithms, Membrane, Nuclear, and Cytoplasmic have been redesigned to make them easier to use by:

▶ Renaming parameters so it is clearer what those parameters affect. For example, in the Membrane algorithm, "Blue Curvature Threshold" has been renamed to "Merging" and "Averaging Radius" has been changed to "Smoothing."

▶ Automatic stain color finding for Cytoplasmic and Nuclear algorithms. (See *"Automatic Stain Color Finder"* above.)

▶ Grouping parameters into groups or stages. For example, in the Nuclear algorithm, the parameters for each stage are grouped together, and you tune the parameters by going sequentially through the stages.

Here is what the parameter groups look like for the Nuclear algorithm:
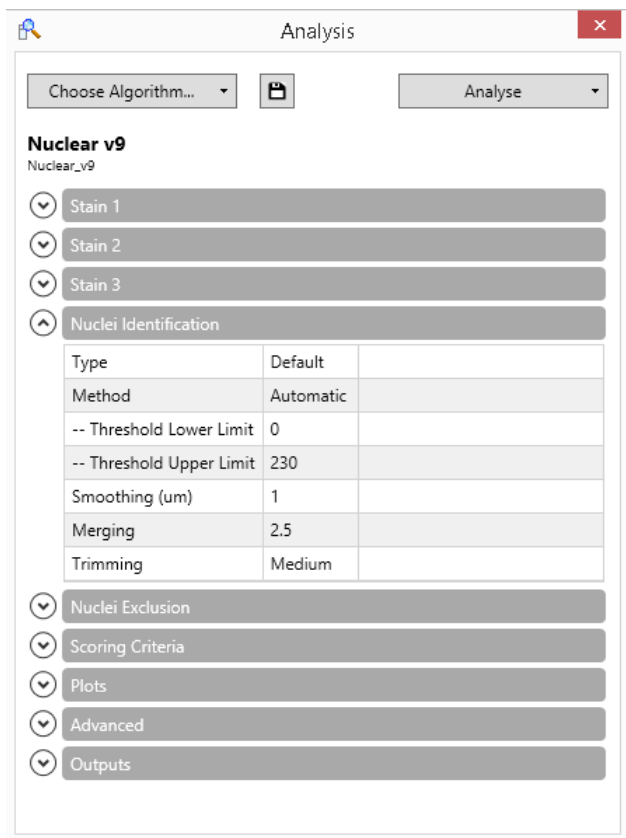
▸ Showing a mark-up image that is specific to the parameter group or stage you are using. For example, when tuning the Membrane algorithm, here is a sample Algorithm Tuning window image for the Nuclei Exclusion stage. It shows the excluded nuclei in red with a black outline along with the segmented nuclei in green from the previous stage:

For more information on tuning the Nuclear, Membrane, and Cytoplasmic algorithms, see:

▸ *Nuclear Algorithm User's Guide*

▸ *Membrane Algorithm User's Guide*

▸ *Cytoplasmic Algorithm User's Guide*

6 Aperio Image Analysis Workstation

Aperio Image Analysis Workstation provides a simple, easy to use workflow for using Aperio image analysis algorithms to analyze eSlides directly on your local workstation.

Although the simplest form of the Aperio Image Analysis Workstation workflow is to analyze a single eSlide in the ImageScope viewer, Aperio Image Analysis Workstation also provides a way for you to organize eSlides into projects and eSlide list pages so that you can run batch analyses on multiple eSlides at once.

For details on using Aperio Image Analysis Workstation, see the *Aperio Image Analysis Workstation User's Guide*.

Here is a preview of the eSlide page on the Aperio Image Analysis Workstation:

Prerequisites

Follow these recommendations to provide Aperio Image Analysis Workstation with optimal resources for viewing and analyzing eSlides.

Workstation Requirements – Minimum

CPU speed	2.7GHz or faster recommended
Hard disk space	100GB free disk space
Memory	4GB or more recommended
Network card	1 Gigabit network card or faster
Video card	24-bit color at monitor's resolution
Operating system	Windows Pro 7 64-bit or Windows 8.1 64-bit

Monitor Requirements – Recommended

Display type	LCD (flat panel)
Screen resolution	1920(h) x 1050(v) pixels
Screen size	24-inch or larger
Color depth	24-bit
Brightness	250 cd/m^2 or greater
Contrast ratio	1000:1

Supported Web Browsers

Other browsers and browser versions may work, but they have not been exhaustively tested by Leica Biosystems Imaging.

Web Browser	Versions
Internet Explorer	11.x
Firefox	37.x, 38.x, 39.x

> *Aperio Image Analysis Workstation is configured for a single user on a single workstation; therefore, it cannot be accessed remotely through network or Internet connections.*

Installation and Configuration

This product is installed and configured by Leica Biosystems Imaging Technical Services or an authorized service representative.

Installing Algorithms

Before you can use an Aperio image analysis algorithm, that algorithm needs to be installed on your workstation. Leica Biosystems Imaging Technical Services will usually install the algorithm for you, but installing it is a simple matter of navigating to the algorithm installer file on your workstation and double-clicking the file to start the installation.

Adding eSlides to Your Workstation

To analyze eSlides, you need to first move the eSlide files to your workstation. Use your normal method of moving files from one workstation to another (for example, a USB drive, a cloud storage service, etc.).

Although you can access the eSlide files directly on your workstation using the Windows file structure, you can optionally use the Aperio Image Analysis Workstation eSlide organization pages to create projects and eSlide pages from which you can select multiple eSlides to analyze at one time (batch analysis).

Workflow

The basic workflow for Aperio Image Analysis Workstation is:

1. Open an eSlide in ImageScope on your workstation.

2. Draw regions on the eSlide to analyze.

3. In ImageScope, choose the algorithm macro you want to use for analysis. (The algorithm macro consists of the algorithm settings fine-tuned for your application and type of eSlides. If you don't have algorithm macros yet, you can create them using ImageScope.)

4. Run the analysis.

5. View or export the analysis results.

The more advanced workflow is:

1. Add eSlides to the eSlide page.

2. Select multiple eSlides and perform batch analysis.

3. View analysis job queue to manage multiple analysis jobs.

4. View or export batch analysis results.

Aperio Image Analysis Workstation also provides tools to organize your eSlides into projects and specimens.

For details on all of these steps, see the *Aperio Image Analysis Workstation User's Guide*.

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Symbols

▸ The following symbols may appear on your product label or in this user's guide:

	Manufacturer
	Date of manufacture (year - month - day)
EC REP	European Union Authorized Representative
IVD	In vitro diagnostic device
SN	Serial number
REF	Catalog number
RH	Relative humidity range
	Storage temperature range
	Electronic and electrical equipment waste disposal
	The exclamation point within an equilateral triangle is intended to alert you to the presence of important operating and maintenance (servicing) instructions. *Le point d'exclamation dans un triangle équilatéral vise à avertir l'utilisateur qu'il s'agit d'instructions d'utilisation et d'entretien importantes.*
High voltage	The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert you to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons. *Le symbole de l'éclair avec la pointe de flèche dans un triangle équilatéral vise à avertir l'utilisateur que le boîtier du produit présente une « tension dangereuse » non isolée d'une amplitude suffisante pour constituer un risque d'électrocution.*
	The flat surface with waves symbol within an equilateral triangle is intended to alert you to the presence of hot surfaces which could cause burn damage. *Le symbole d'une surface plane et de vagues dans un triangle équilatéral vise à avertir l'utilisateur de la présence de surfaces chaudes qui peuvent causer des brûlures.*
	The UV lamp within an equilateral triangle is intended to alert you to the presence of UV light within the product's enclosure that may be of sufficient magnitude to constitute a risk to the operator. *La lampe UV dans un triangle équilatéral vise à avertir l'utilisateur de la présence de rayonnement UV dans le boîtier du produit qui peut être d'une amplitude suffisante pour constituer un risque pour l'utilisateur.*