



## Engaging the Power of Digital Pathology with Lenovo and Intel® Solutions

Digital pathology is rapidly becoming commonplace as the healthcare industry discovers the benefits and efficiencies that come with its adoption. What was once achieved solely through microscopic examination of glass slides is now accomplished through the creation, sharing, and archiving of whole-slide digital images. Today's pathology is moving past mere tissues and scans to encompass improved quality, productivity, and even further innovation.

Digitizing pathology unlocks new possibilities for pathologists and hospitals that other departments in the care delivery network have been experiencing for years. Pathologists can now do telepathology and collaborate with peers across the world. Digitizing whole slide imaging (WSI) also removes the problem of degradation and allows for AI and machine learning to be applied to this critical area of healthcare and life sciences. Bringing pathology up to an equal plane with radiology and genomics will help accelerate the time to insight as well as improve patient care and outcomes while reducing costs, which will democratize healthcare.

### Two Key Requirements for Digital Pathology Implementation

**Digital pathology utilizes large images** that require lots of computing power. Despite methods of reducing file size, a single whole slide image in practice can often exceed 1 GB in size.<sup>1</sup> Even with whole slide images being stored at multiple resolutions to accommodate more streamlined loading, computing power is key to realizing much of the technology's promise. Whether that promise involves enhanced collaboration across town or across the globe, improved education for current and future pathologists, advancements in clinical trials and personalized care, or all of the above.

Having color-calibrated displays on mobile workstations that can optimize digital images to accurately show WSI as pathologist share and collaborate across the world is also an important requirement. **Color accuracy is key** as it can heavily influence pathologist diagnoses. A set of experiments examining the effect of a computer display's age on color found that average times for scoring digital slides increased on aged and ineffective displays. What's more, pathologists reported increased difficulty in reading digital slides.<sup>1</sup> Pathologists who collaborate with each other also need to all see the same image, colors, and resolution no matter where they are located.



<sup>1</sup> <https://meridian.allenpress.com/aplm/article/143/2/222/64743/A-Practical-Guide-to-Whole-Slide-Imaging-A-White>

# Lenovo Workstations Powered by Intel® and Your Digital Transition

Lenovo Workstation solutions provide the performance, reliability, and security it takes to drive your digital pathology transition forward. For power and performance, Lenovo's premium mobile workstations, the ThinkPad P1 and the ThinkPad P16 on Intel vPro® Enterprise platform are some of the most powerful Lenovo laptops on the market. They not only blaze through heavy workloads but also execute precise calibration for crisp clear images.

In laboratory environments where quality assurance testing is common for clinical asset displays, the ThinkStation P360 Ultra excels in every way. Redefining the power of small, the P360 Ultra on the Intel vPro® Enterprise platform is powered up to Intel® Core i9 processors for ultimate performance and remote manageability. It can also be configured in multiple ways to meet your workflow needs while offering maximum reliability and no compromise on security.

Compared to the competition, our mobile and desktop workstations empower the work of digital pathology in ways that are better than the rest. With products like the ThinkStation P360 Ultra, no one comes close to the form factor, performance, and specifications of Lenovo hardware solutions.



ThinkPad P1



ThinkPad P16



ThinkStation P360 Ultra



ThinkVision P32



ThinkVision P27

## Visualizing Digital Pathology Through New Glass

As pathology goes digital, pathologists require ultra-high definition displays to view their WSI accurately. Lenovo ThinkVision P Series displays offer color-accurate displays with a range of display size options.

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