# Unlock the Value of Your Diagnostic Data with Dell EMC PowerScale

Digital Pathology

- The need for effective, accurate, and scalable pathology solutions is becoming more critical due to longer average life spans and increasing cancer rates.

- There is a global shortage of pathologists to provide diagnoses.

- Digital pathology improves the speed with which pathologists and clinicians can diagnose and treat patients.

Why PowerScale?

- PowerScale SmartPools automated tiering enables data movement without manual processes – saving time and money.

- PowerScale OneFS creates a single shared pool of storage, eliminating multiple volumes to save time and money.

- PowerScale allows for multi-cloud connectivity to easily share pathology and medical data anywhere in the world.

Artificial Intelligence (AI) & Digital Pathology

- AI enables image analysis of digital pathology slides and can help improve accuracy of diagnoses.

- Puts patients first. More samples analyzed daily accelerates the time to diagnosis and begin treatment.

## The Challenges in Pathology

As the global population continues to age and an increased prevalence of cancer and other diagnostic-intensive diseases continues to rise, the need for effective, accurate, and scalable pathology solutions has become more critical. However, there is a global shortage of pathologists and laboratory services to provide the necessary diagnoses. By pairing digital pathology, AI, and other cutting-edge technologies, healthcare and life sciences organizations can help bridge this gap. With digital pathology, pathologists and other clinicians can digitalize tissue samples to easily view, analyze, manage, and share these images for faster diagnoses.

With the accelerating growth in diagnostic information, health IT departments are being tasked with providing increasingly sophisticated infrastructure to digitize and store tissue sample slides. Turning the slides into digital files enables pathologists, researchers, and healthcare systems to ingest and analyze data in real time; requiring a robust technology infrastructure solution – including flexible scale out storage options.

## Why Dell EMC PowerScale & Dell EMC ECS?

Digital pathology is a storage-heavy workload. With whole slide images (WSI) averaging 3-5GB per slide, healthcare providers need scalable storage that can grow with their needs and high-performance computing that can keep up with analysis workloads. As with any technology touching patient data, security and data protection are a must. This is why Dell EMC solutions are purpose-built for your digital pathology needs, including high- throughput scanning, real-time indexing, and secure, managed access to the digital slide repository and pathology reports inside and outside the organization.

PowerScale enables you to drive digital pathology initiatives forward with confidence by delivering reliable, performant, and cost-effective storage at nearly any scale. PowerScale can easily grow with your needs - in fact, storage nodes can be added to an existing cluster in about 60 seconds with zero downtime.

PowerScale allows you to consolidate all your medical imaging onto a single storage cluster, including PACS, cardiology PACS, Vendor Neutral Archives, and of course, current digital pathology systems.

With Dell EMC PowerScale's SmartPools, automated tiering, your most important and/or demanding workloads can leverage all-flash nodes while older or archived images can live on archive nodes. This data movement is done without any manual processes.

With its legendary OneFS operating system, PowerScale is incredibly easy to manage. OneFS intelligently creates a single shared pool of storage, eliminating multiple volumes or silos, allowing administrators to save time and money. OneFS doesn't just make data management easy, it also keeps data safe and secure. With data at rest encryption (D@RE) and self-encrypting drives, medical data remains protected. PowerScale even offers Dell EMC PowerScale SyncIQ which allows for automated replication to another cluster.

PowerScale and ECS allow multi-cloud connectivity. This can be in the form of an on-premise or off-premise archive, through the Dell Technologies Cloud for better management of your data, or users can leverage public cloud storage from some of the hyperscalers such as Amazon AWS, Microsoft Azure, and Google Cloud Platform. By utilizing the cloud, pathology and related medical data can be easily shared anywhere in the world, used for other workloads, or treated as an archive. PowerScale's rules-driven cloud capabilities and archiving abilities allows institutions to retain images in accordance with hospital and government mandates.

## Technology Partners

Dell EMC has established long and trusted relationships with some of the best healthcare technology partners in the world. Our partnerships include leaders in the digital pathology field, such as Fujifilm, Huron Digital Pathology, Inspirata, Leica BioSystems, Phillips, Proscia, Sectra, and others. These partnerships help make digital pathology real for our customers through integration with their WSI scanners, AI software, and other specialized capabilities.

## AI & Digital Pathology

Dell EMC's comprehensive High-Performance Computing (HPC) Solutions, including NVIDIA GPU- and Intel FPGA- accelerated servers, deliver specialized processors and accelerators for intensive precision medicine workloads such as AI-enabled image analysis of digital pathology slides. The diagnostic pathology process is long and complicated, and AI can improve the accuracy of the diagnosis and help automate many of the manual time-intensive steps, such as sample identification, disease pattern recognition and clinical pathology classification. With the use of AI and digital pathology, institutions can put the patient first, with more samples being analyzed daily, accelerating the time to diagnosis and treatment.

## Bettering Patient Care

Dell Technologies is helping healthcare organizations bring digital pathology to life. With our unstructured data solutions, HPC offerings, and our technology partners, we can offer a true end-to-end digital pathology solution. With this solution in place, pathologists can accelerate their workload by scanning more samples, analyzing more slides, and automating many steps with the introduction of artificial intelligence. This means faster diagnosis and earlier treatment, leading to improved overall patient care.