HITACHI



Solution Profile

Hitachi Biological and Medical Imaging Solutions

Scale, Performance, and Governance for Medical Image Data

Support Scale

Multi-tier storage supports ever-increasing volumes of high-resolution, multi-dimensional imaging across active projects, reference data and compliant archives.

Deliver Performance

Accelerated compute and high throughput, high IOPS data access enables low-latency retrieval for front-end viewers, image reconstruction, metadata queries.

Aid Governance

Facilitate compliance by protecting sensitive patient information while ensuring data integrity, consistency, privacy, and auditability.

The Data Challenges of Biological and Medical Imaging

Biological and medical imaging is creating a rapidly expanding data-management challenge: roughly 10 million diagnostic imaging procedures occur globally each day, generating billions of DICOM files annually across modalities such as X-ray, CT, MRI, ultrasound, and PET/CT. Higher-resolution and volumetric studies are increasing file sizes, while annual growth rates can reach 20–30% for data-intensive modalities like CT and PET/CT. This means storage planning is no longer just an IT capacity exercise—it is a business-critical decision tied to clinical performance, regulatory retention, cost control, and long-term scalability.

The key is a tiered storage architecture with high-speed primary storage for active studies, lower-cost secondary storage for less frequently accessed images, and compliant archive storage for long-term retention. A multi-tier approach helps balance control, performance, capacity planning, compliance, access speed, and cost for a scalable, secure and cost-optimized imaging data platform that can absorb ongoing growth without compromising clinical access or regulatory obligations.



The Hitachi Solution

Hitachi biological and medical imaging solutions are designed to meet the demanding scale, performance, and data governance challenges of modern biological and medical imaging. The combination of powerful accelerated compute servers with fast, scalable, reliable multi-tier storage architectures creates scalable, secure, cost-effective solutions that comply with regulatory standards while supporting rapid access and long-term retention.

Accelerated Compute

Accelerated compute supports acquisition orchestration and inline quality control at the edge where the scanning electron microscope, MRI and CT images are captured, and facilitates mosaicking, section alignment, volume assembly and voxel generation, pyramided image creation, 3D image segmentation, segment classification, and aggregate table generation.

Data Storage

A global namespace with global semantics and workload optimized compression spans the multi-tier, petabyte-scale storage architecture delivering high performance read and write access to vast and distributed datasets. Hitachi VSP One high-performance block storage acts as the 'hot' tier for active image acquisition and in-flight stitching. Hitachi object storage serves as the 'warm' and cold tiers with disk for active datasets and tape media for raw archives and long-term retention while advanced metadata tools, federated search, encryption, and access controls simplify data privacy management, reduce risk, and aid regulatory compliance.

Focus on Your Business, not Your Infrastructure

With Hitachi biological and medical imaging solutions, organizations can turn growing imaging data demands into a strategic advantage. By combining scalable storage, accelerated performance, and governed data management, Hitachi helps reduce operational complexity, control long-term costs, protect sensitive information, and keep clinicians and researchers focused on delivering better outcomes.

Minimum Requirements

- Hitachi AC520 Multi GPU server
- 1TB of memory
- 200Gb Networking
- 4 x NVIDIA H200 GPUs with NVLink
- VSP One Object (S3 and S3 Tables) with 15PB of storage



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