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WHITE PAPER

Medical Image Archiving – A Case Study on Leveraging Cloud NAS for Healthcare MSPs

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Executive Summary

Healthcare IT teams face constant pressure to expand infrastructure, protect sensitive patient data, and comply with strict regulations, all while working within limited budgets. The worldwide market for Picture Archiving and Communication Systems (PACS) and Vendor Neutral Archiving (VNA) solutions alone is expected to reach nearly $9.8 billion by 2034,[1] highlighting the significant investments organizations must make to manage, store, and secure medical imaging data across increasingly complex and dispersed environments.

These converging demands make storage one of the most significant and unpredictable cost centers in healthcare IT. Cloud computing has become a powerful solution for healthcare data scalability and efficiency; however, issues such as pricing variability, egress fees, and multi-cloud complexity must be addressed.

Whether managing digital pathology or Vendor Neutral Archiving (VNA), healthcare organizations face an explosion in high-resolution imaging, broader data access needs, and retention requirements that can last up to 20 years. As image quality improves rapidly and access widens to more users, these competing priorities create a significant storage challenge—one that is quickly turning into an IT budgeting nightmare.

For managed service providers (MSPs), serving healthcare clients presents a significant opportunity but also entails strict compliance, security, and scalability requirements. MSPs must protect critical assets with no room for error. Even a single outage can threaten a long-term contract and impact quarterly revenue.

Fortunately, Wasabi Cloud Network Attached Storage (NAS) is a reliable tool that MSPs worldwide trust to securely manage data from overwhelmed on-prem environments and expand storage efficiently. Paired with the Wasabi Account Control Manager, this powerful solution allows even the largest MSPs to easily oversee multiple users across various industries and billing structures.

This white paper explains how MSPs can modernize healthcare IT infrastructure at scale, featuring Infratech's partnership with Imperial College Healthcare NHS Trust in the United Kingdom as a real-world example of secure, efficient, and cost-effective cloud storage transformation.

Read on to learn how they scale their data storage and gather practical insights for delivering secure, compliant, and cost-effective cloud data services for healthcare IT.

Chapter 1: Infratech — Modernizing IT for Imperial College Healthcare NHS Trust

Infratech, a managed service provider based in Birmingham, England, delivers IT services to organizations across the UK, including Imperial College Healthcare NHS Trust. With over one million patient contacts each year, the Trust is one of the country's largest acute healthcare systems and, in partnership with Imperial College London, the UK's first Academic Health Science Centre (AHSC).

As a strategic partner, Infratech helps modernize IT infrastructure and, in doing so, quickly identified a critical challenge: the secure archiving and rapid access to large datasets generated by digital pathology workflows, including blood sample data from a Philips IMS system. These datasets required a solution that balanced security, efficiency, and accessibility across departments.

The challenge: Secure, scalable access without cross-visibility

Infratech's customers depend on various cyber resilience tools—including backups, disaster recovery, and storage—but managing access to each customer's data was inefficient. Billing was also complicated due to inconsistent account-level tracking.

Cloud Network Attached Storage (NAS) was needed to enable seamless interaction with backend data across departments while complying with strict data governance standards. Each department had to access only its own data, cross-visibility had to be prevented, and IT required centralized control without adding complexity.

Key challenges included:

- Inefficient customer data access and account management
- Lack of consistent billing
- Strict data governance requirements, including no cross-visibility
- The need for centralized IT control without added complexity
- Scaling digital pathology

As Sat Chana, Managing Director at Infratech, explained: "Various departments within the NHS Trust needed access to archives in Cloud NAS—from pathology to ophthalmology—yet accessing only the data they needed to maintain a secure environment without cross-visibility was imperative."

Additionally, the NHS Trust was looking for a way to deploy its structures more seamlessly to build a bottomless archive that can generate a recurring revenue stream and differentiate its service from competitors.

The solution: Segmented Cloud NAS with centralized control

Infratech deployed Wasabi Cloud NAS with Wasabi Account Control Manager to create a multi-tenant architecture that balanced isolation with simplicity. Wasabi Account Control Manager enables them to onboard and manage multiple accounts from a single interface.

Key results:

- Separate Cloud NAS accounts for each department
- Unique access keys and permissions by team
- Full usage visibility for billing and reporting
- Centralized management without data exposure between groups

"Using separate Cloud NAS accounts through the Wasabi Account Control Manager made it simple to allocate storage and permissions so that every department had its own access keys and usage visibility," Chana said. "The Trust's IT team could manage all of this centrally without staff ever seeing another department's data."

Architecture: How Infratech built a scalable Cloud NAS environment

Infratech's customers depend on a broad range of capabilities—from backup and cyber resilience to disaster recovery and storage—making seamless and reliable data access crucial. To deliver this experience, Infratech focused its architecture on Cloud NAS, offering a unified interface that allows users across departments to access data easily, regardless of the underlying system's complexity.

Behind the scenes, the Wasabi Account Control Manager supports this foundation by enabling efficient account management, usage tracking, and billing visibility, while allowing Infratech to implement tailored policies for each team. Together, these features ensure a smooth user experience on the front end with scalable control and governance on the back end.

Seamless user experience with zero-byte stub files

Wasabi Cloud NAS installs on a Microsoft® Windows® server in just five minutes—no reboot required—and immediately optimizes storage while safeguarding data, all without needing client software on end-user devices.

With Wasabi's reclaim space policies enabled, files moved to the cloud are replaced with zero-byte stub files, freeing space locally in the New Technology File System (NTFS). These stub files are placeholders that allow applications to function normally, as if the data exists in its original location, maintaining application workflows without disrupting the user experience.

Key results:

- Files moved to the cloud are replaced with zero-byte stub files
- Applications behave as if data exists in its original location
- No disruption occurs in the user experience
- Immediate storage optimization
- Transparent access to archived data

Workflow optimization without user friction

Another enhancement Infratech implemented—made possible by Wasabi Cloud NAS—was streamlining functionality to align with user expectations for legacy systems, without requiring staff retraining or consuming valuable time. “We tuned the delete behavior in Cloud NAS so users wouldn’t need to confirm deletions or manage recycle bins,” said Chana. “By adjusting a registry key, deleted files bypass the recycle bin entirely, creating a cleaner and faster workflow.”

He added, “That small tweak made a huge difference for the NHS Trust. Scientists and technicians can focus on their work instead of managing files, while the IT team maintains full control over retention and backup policies in Wasabi.”

Key results:

- No retraining required for staff
- Faster workflows
- Reduced user friction
- Greater IT control

Tiered storage workflow for performance and compliance

Working with Infratech and validated by the Philips IMS team, the NHS Trust designed a tiered storage workflow that included:

- 0–30 days: Third-party image management system
- Up to 6 months: On-prem storage
- Long-term: Wasabi cloud storage

Data is transferred via a secure 10 Gbps direct connect link, ensuring:

- Low latency
- High performance
- Seamless access to archived data

Security and resilience: Built for healthcare-grade protection

Immutability is a crucial aspect of modern data protection, and medical image archiving is no exception. When Infratech needed an immutable solution to expand its on-prem deployment for multiple customers, Wasabi Cloud NAS offered a fully redundant platform.

Using a Write Once, Read Many (WORM) architecture, Wasabi Cloud NAS guarantees that files are stored and retrieved with integrity while meeting strict standards such as the Health Insurance Portability and Accountability Act (HIPAA) for electronic Protected Health Information (ePHI).

Wasabi's ISO 27001-certified infrastructure, located in top tier data centers, offers low-latency, high-performance connectivity—crucial for the NHS Trust's 10 Gbps requirements. Beyond security, availability was essential: archives must stay accessible during any disaster.

"We designed two Cloud NAS instances synchronized entirely through Wasabi," Chana said. "There's no on-prem replication—both nodes replicate directly via Wasabi buckets. Each has a 10 TB local cache, and together they form a distributed file system-clustered (DFS) setup with one passive node ready for failover."

Together, these capabilities ensure that critical healthcare data remains protected, compliant, and continuously accessible—no matter the threat or operational demand.

High availability with distributed Cloud NAS

To ensure continuous access, performance, and reliability, Infratech designed the distributed hybrid Cloud NAS architecture shown in the following figure. This setup integrates storage, security, and performance into a unified system, supporting innovation, growth, and operational efficiency:

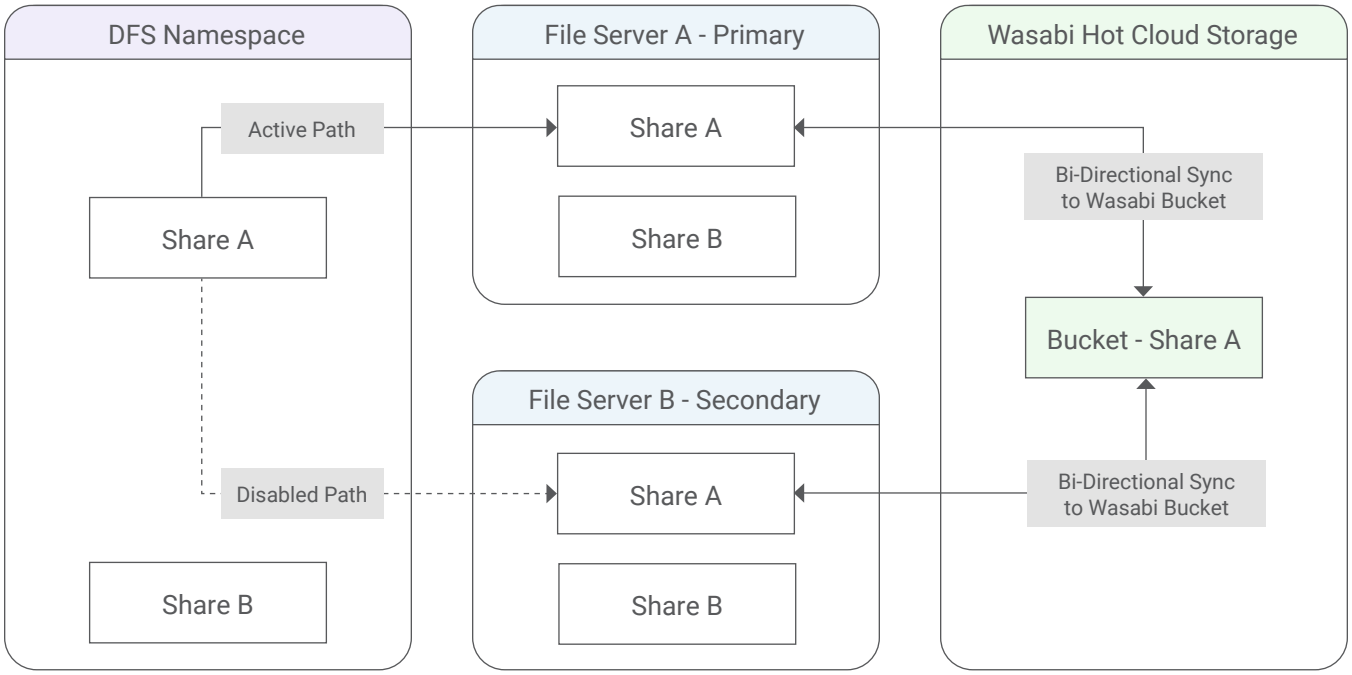

Figure 1: DFS-clustered Wasabi Cloud NAS setup

This diagram shows a DFS-clustered setup in which users access Share A via a central namespace that routes to the primary file server, while Share B is present but not active. A secondary server stands by for failover, hosting both shares. Both servers sync data bi-directionally with a Wasabi cloud bucket, ensuring everything stays up to date and maintains access if the primary server goes down.

"When one path fails, we simply repoint DFS to the other. If both paths stay active, replication timing can cause a brief traffic jam, so we manage those paths carefully," Chana said. "Over time, we even partitioned use cases across both nodes in an active-active configuration for load balancing and performance."

Key results:

- **Elastic, bottomless storage:** Petabyte-scale archives that grow with demand.
- **Seamless local access:** Staff retrieves files as if they were on-prem, while the cloud handles storage and management.
- **Predictable, affordable costs:** Eliminates capital-intensive hardware refresh cycles.
- **End users (NHS staff) don't have to think about storage** — The MSP manages it entirely in the background with Wasabi technology.

Chapter 2: Lessons Learned — A Blueprint for MSP Success

Infratech's experience with Imperial College Healthcare NHS Trust provides a blueprint for MSPs serving complex, data-intensive environments. The following lessons learned show how to modernize IT infrastructure while creating scalable, repeatable, and differentiated services:

1. Bridge business and technical value

MSPs succeed when they translate technical solutions into tangible benefits:

- **Faster workflows:** Streamlined Cloud NAS operations and zero-byte stub files eliminate manual file management.
- **Reduced data sprawl:** Tiered storage and cloud offload free on-prem capacity and simplify management.
- **Minimized admin overhead:** Centralized account control provides IT visibility without exposing sensitive data across departments.

Lesson: Frame solutions around business outcomes—efficiency, productivity, and cost control—rather than technology specs alone.

2. Drive margin expansion with predictable cloud models

Cloud NAS enables predictable, recurring revenue and long-term cost control:

- **Predictable billing:** Usage-based departmental billing eliminates surprise costs.
- **Lower operational costs:** Reduced hardware and legacy system management.
- **Long-term scalability:** Storage grows with demand without additional capital expenditure.

Lesson: Leveraging cloud storage shifts the MSP business model toward predictable, recurring revenue and higher margins.

3. Build compliance and resilience into the architecture

Healthcare and regulated industries require secure, dependable, and compliant solutions:

- **Immutable storage:** Protects data from accidental deletion or ransomware.
- **Regulatory alignment:** ISO 27001 and HIPAA-compliant storage ensures legal obligations are met.
- **Reliable access:** Tiered storage and DFS failover guarantee continuous availability.

Lesson: Embedding compliance and resilience builds customer trust and reduces risk exposure.

4. Differentiate through scalable, high-value services

MSPs can distinguish themselves with scalable, high-value offerings:

- **Lower cost of delivery:** Offloading data to Cloud NAS reduces infrastructure spend while maintaining performance.
- **Enhanced services:** Segmented accounts, tiered workflows, and hybrid storage provide high-value options.
- **Competitive advantage:** Combining technical expertise with business-focused outcomes wins deals over legacy providers.

Lesson: Strategic differentiation comes from offering secure, cost-effective, and scalable solutions that directly address customer pain points.

5. Implement repeatable, scalable operational practices

Additional insights for MSPs to replicate success:

- **Identify bottleneck workflows** in imaging, genomics, or other high-volume datasets.
- **Simplify the end-user experience;** users should not have to worry about storage; the MSP manages backend complexity.
- **Apply hybrid cloud strategies;** combine on-prem access with cloud elasticity for seamless performance.
- **Leverage cloud economics;** predictable storage costs enable recurring revenue and scalable margins.

Lesson: Operational excellence comes from streamlining workflows, leveraging hybrid cloud, and applying predictable economics to deliver scalable, repeatable, and high-value services.

Chapter 3: Conclusion — Reducing IT Burden and Operational Complexity

Cloud NAS is more than just storage—it is a foundation for MSPs to expand healthcare offerings. Cloud NAS allows MSPs to manage backend data seamlessly while giving IT full oversight.

For Infratech and Imperial College Healthcare NHS Trust, Wasabi Cloud NAS provided:

- Scalable digital medical imaging and pathology archiving
- Predictable costs
- Stronger patient data workflows without cross-visibility

Wasabi Cloud NAS removed pressure from the Infratech IT department to procure expensive on-site hardware and manage backup media, freeing teams to provide better service and security.

“The Wasabi Account Control Manager gave us greater insight into our accounts under management and streamlined our billing and management workflows,” Chana said.

Cloud NAS enables MSPs to deliver scalable, secure, and compliant solutions for complex, data-intensive workflows. It provides predictable, affordable storage, reducing capital expenditure and operational headaches.

MSPs can prioritize customer outcomes over infrastructure management, creating differentiated services that generate recurring revenue. For healthcare clients, Cloud NAS safeguards sensitive patient data, streamlines operations, and enables faster, more efficient workflows.

In short, Wasabi Cloud NAS and Wasabi Account Control Manager provide MSPs with a strategic foundation to modernize infrastructure, enhance operational efficiency, and deliver tangible business value for both IT teams and end users.

Key takeaways:

- Scalable, secure, and compliant storage
- Predictable, affordable costs
- Reduced capital and operational expenditures
- Enhanced MSP service offerings and recurring revenue

Discover how Cloud NAS can transform your organization’s workflow by starting your free trial today.

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