



“In our critical and fast paced environment, users complain loudly over any minor response time or downtime problem they may experience. Since the Hitachi storage solution was installed, I’ve heard nothing at all! My peace of mind is intact, and I’m grateful for that.”

*Alex Fisher, M.D.
 Head of Radiology Services
 Meuhedet Health Fund*



Meuhedet Health Fund

INDUSTRY Healthcare

SOLUTIONS [Modular Platform, Business Continuity, Replication](#)
Hardware — Hitachi Adaptable Modular Storage 2100 (6)
Software — Storage Navigator Modular 2
Services — Installation, maintenance and support services provided by Hitachi Data Systems Customer Service and Support

Meuhedet Health Fund Chooses Centralized Hitachi Modular Storage for Its Advanced Imaging Environment

The Imaging Department at Meuhedet Health Fund, Israel's third largest healthcare provider, runs the most advanced picture archive and communications system (PACS) project in the country. Faced with storage capacity demands five times greater than planned and looking for a flexible and scalable solution to facilitate future growth, Meuhedet redefined its storage strategy and implemented a solution from Hitachi Data Systems.

Company Background

Meuhedet Health Fund is the third largest provider of healthcare services in Israel and has been the fastest growing fund since 1995. It has quadrupled in size over the last 20 years, reaching one million insured members in 2009.

Founded in 1974, following a merger of the Amamit and Merkazit funds, which have operated since 1931 and 1936, respectively, Meuhedet has been a leader in member satisfaction for the last 18 years. A recent survey commissioned by the government of Israel found that 94 percent of its members were either satisfied or very satisfied with the level of care they received.

Meuhedet Health Fund operates 170 clinics throughout the country and provides imaging services at six specialized radiology centers and up to 30 associated imaging institutes. It is the first healthcare provider in Israel to offer full PACS services.

PACS Environment

Aware of the rapid technological changes occurring in the healthcare sector, Meuhedet made a strategic decision to get involved with new methodologies such as IPC (physician access to information at the point of care) and PACS.

The PACS project, based on the Fujifilm Medical Systems, USA, Synapse solution, running on Dell provided Microsoft Windows Server solutions and direct attached storage (DAS) architecture, commenced in 2006. The project is currently supporting standard imaging exams, such as ultrasound (US), radio frequency (RF), computed radiography (CR) and mammography (MG).

The system enables users to store, retrieve, distribute and present clinical images and related data quickly, reliably and in a secure and efficient manner. Its user community currently consists of 55 radiologists via

PACS dedicated workstations as well as 300 orthopedic surgeons and physicians. Access to the system via User ID and Password is granted per request to each one of the 3000 medical doctors associated with Meuhedet.

The PACS project is outsourced for 10 years to Dinco, Ltd., a Fujifilm Medical agent in Israel, which assumes full responsibility for implementation, integration and support, as well as for the evaluation of hardware, software and communications subsystems.

Business Challenges

The most critical business challenge faced by Meuhedet was the ever increasing volume of information generated by PACS, resulting in a demand for storage capacity five times greater than planned. Since the DAS architecture was limited in terms of flexibility and scalability, and could not sustain the rapid growth, information overflow and storage shortage were soon to be expected.

The short term solution would have been to keep upgrading the existing storage. Meuhedet, however, decided to take a long term approach and to redefine its storage strategy so that it allows for future advancement and supports unlimited growth.

Long Term Considerations

Meuhedet identified six considerations to address in the long term:

1. Survivability. Recovery from disaster is crucial as upon crash the operation switches temporarily to manual mode, and accuracy may be lost due to human errors.



"The current Hitachi storage architecture is fully scalable and highly flexible; thus, it enables us to handle the challenging and rapidly growing demands of modern imaging technology."

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2. Compliance. According to recent regulations, imaging records should be retained for up to 99 years.
3. Load balancing. All the imaging centers operate at the same time, generating huge volumes of imaging data.
4. Reliability. A consolidated view of the patient record could not be established if exams were made at two or more different imaging centers. For accurate diagnosis, physicians may need to retrieve past information in order to compare to current data and detect changes.
5. Response time. The physician must get access to the imaging data at the speed of a mouse click.
6. Future growth. Storage requirements are expected to grow even more rapidly in the near future due to demand for PACS services for more complex exams like multislice computed tomography (CT) scans and magnetic resonance imaging (MRI), increasing adoption of digital mammography systems and growing integration of cardiology exams (echocardiogram or echo).

In order to ensure that all the abovementioned challenges are dealt with, a new strategic approach to storage had to be taken. Consequently, Meuhedet decided to implement central storage architecture.

Hitachi Data Systems Shows Best TCO, Highest Value, Top Support

The Hitachi Data Systems solution was evaluated against EMC Clariion midrange storage and NetApp storage.

According to Yaron Kober of Dinco, Ltd., the decision was made along the following criteria: worldwide partnership with Fujifilm, expertise, cost-effectiveness, installed base and quality of support.

He reports that the Hitachi Data Systems solution was chosen because it offered the best total cost of ownership (TCO) and lowest price for performance, as well as the highest quality of service and support. Kober stresses the fact that Hitachi Data Systems

Israel provides direct maintenance and support services, unlike its competitors who offer these services through local service providers. Other considerations in favor of Hitachi Data Systems were its selection as a worldwide preferred provider of advanced storage solutions for Fujifilm's Synapse PACS, and the extent of its worldwide installed base.

The Solution

The Hitachi Data Systems solution for the long run is based on a hub and spoke design. This design provides fast response time at each spoke and a consolidated centralized archive at the hub. A Hitachi Adaptable Modular Storage 2100 with high speed SAS disk drives and iSCSI interface is used at each of the six radiology centers to locally store and retrieve PACS data.

In the future, Meuhedet plans to add another Adaptable Modular Storage 2100 with a mix of fast SAS drives and high volume SATA II drives to be used as an archive and backup system at a central location. Backup to the hub will be completed with Hitachi Data Protection Suite, powered by Commvault. Specifically, Hitachi Continuous Data Replication software, part of the suite, which will allow asynchronous server-based replication over IP to each spoke to the hub. The Hitachi Data Protection Suite will also provide backup to tape functionality at the hub.

Major Benefits and Business Values

According to Dr. Alex Fisher, head of Radiology Services at Meuhedet, it took half a working day to fully transfer the system to the new storage architecture. They experienced neither major crashes nor minor problems, and the change was transparent as far as the users were concerned.

With the implementation of the Hitachi Data Systems solution, Meuhedet Health Fund can store huge volumes of imaging data, in original format, with no lost accuracy due to compression or human errors. It is also better equipped to adhere to global standards and local regulations for data preservation and retention.

Healthcare providers are able to cover the spectrum of requirements ranging from a departmental image archive to enterprise disaster recovery and business continuity solutions, while ensuring compliance for content preservation and retention.

The most important benefit yet is that Meuhedet is now providing its clinical users faster and more comprehensive access to patient exam results; thus, the company improves by far physicians' capacity to make accurate diagnoses and enhances their ability to provide high quality medical service.

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