

Test Report – BridgeHead MediStore™

Tests Conducted at Massachusetts General Hospital Enterprise Imaging Lab Medical Imaging™ On Industry Leading PACS Applications

Test Purpose: BridgeHead Software enlisted the services of the Enterprise Medical Imaging Lab at the Massachusetts General Hospital to perform validation testing of its BridgeHead MediStore™ enterprise healthcare archive. The purpose of these tests was to demonstrate BH MediStore's ability to provide archiving and disaster recovery services for three leading PACS (Picture Archiving and Communication Systems) in common use today.



“As hospitals capture increasing quantities of digital data every year, it is clear that the management and storage of that data needs to be optimised in order to keep costs under control. Deployment of an enterprise healthcare archive is the best way to lower costs, protect systems, and foster interoperability of data in a healthcare environment. Given that 70% of a hospital's data may be comprised of medical images, it is of key importance that a true enterprise healthcare archive include a PACS-neutral DICOM archiving capability such as the one provided by BridgeHead MediStore.”

Tom Schultz, Chief Engineer of Massachusetts General Hospital (MGH) Enterprise Medical Imaging (EMI) Laboratory

Introduction

Healthcare organizations today face enormous demands on their data storage infrastructure. By far the largest consumer of storage at these institutions is Picture Archiving and Communication Systems or PACS. The digital images created by PACS can account for 70% or more of a hospital's total data footprint. Frequently, this data is locked away in departmental storage silos, often outside the control of IT. This creates a data management burden that often results in the inefficient use of costly storage resources.

In order to better control this deluge of medical images, healthcare IT departments are increasingly deploying enterprise archiving strategies that allow them to centrally manage storage throughout their organizations. This not only cuts cost, by taking advantage of economies of scale and tiered-storage architectures, but also supports a hospital's business continuity plan (in that the responsibility of managing the data assets transfers to IT who are mandated to ensure disaster recovery of all critical systems).

For any enterprise healthcare data archive to be effective, it must be able to receive, store and protect DICOM data from a variety of PACS, modalities or any other systems that transmit medical images.

BridgeHead MediStore™ provides such a PACS-neutral DICOM archive; a self-contained networked computer system used for archiving diagnostic clinical images and other medical documents such as softcopy presentation states and structured reports.

BH MediStore™ can receive documents from external systems for permanent storage, retrieve information about such documents and recall the documents directly, if required. The system conforms to the DICOM standard to allow the sharing of information with other digital imaging systems.

However, as adherence to the DICOM standard varies among vendors, it cannot be assumed that two DICOM-compliant systems will be compatible “out of the box”. Therefore, BridgeHead Software decided to undertake a program of validation testing which involved a thorough review of the PACS vendor's respective DICOM Conformance Statements, followed by lab testing of the interaction between systems, in order to ensure compatibility.

Testing Environment

BridgeHead Software chose to work with the Enterprise Medical Imaging (EMI) Lab at Massachusetts General Hospital (MGH) in Boston to conduct validation testing of BH MediStore with a number of common PACS in use today. As a successful, self-sustaining entity, performing industry-sponsored research, EMI provided the facilities, test PACS, subject-matter expertise and independent viewpoint crucial to ensuring fair, impartial and successful testing of the BridgeHead MediStore solution.

The PACS applications chosen for validation testing with BH MediStore were three of the top ten vendors, by market share, as reported by HIMSS Analytics™. For the purposes of this report they are referred to as PACS A, PACS B and PACS C.

Test 1 Results – PACS A v11.5.1

BridgeHead MediStore was shown to work well with PACS A v11.5.1 and can easily provide disaster recovery and archiving services for it.

- ▶ PACS A can be configured to store new studies, in multiple locations, designated as cache or archive
- ▶ These studies are stored in cache locations immediately and in archive locations within a reasonable time frame

- ▶ The PACS will first attempt to retrieve studies from cache, then archive locations
- ▶ Policies can prune studies from cache
- ▶ BH MediStore will provide PACS A customers with both disaster recovery and PACS pruning capabilities.

Test 2 Results – PACS B v5.2.5 SEU2

BridgeHead MediStore was shown to work with the PACS B v5.2.5 DICOM interface.

- ▶ Policies can prune studies from primary storage
- ▶ PACS B can query BH MediStore and find studies archived by other PACS. It can then retrieve those studies.

We are aware that PACS B’s preferred method of archiving is to write files to a known location

rather than a DICOM archive. While BH MediStore could provide file-based archiving for that location, that would not provide the full benefits of the BH MediStore DICOM interface. BridgeHead, therefore, recommends use of the DICOM interface with PACS B, allowing BH MediStore to read the tags and then populate its own database. It then allows other PACS to search and retrieve the DICOM data.

Test 3 Results – PACS C v6.0 MR2

BridgeHead MediStore was shown to work with the PACS C v6.0 MR2.

- ▶ PACS C can query BH MediStore and find studies archived by other PACS. It can then retrieve those studies.

PACS A, B & C Compatibility with BH MediStore

Supports	PACS A	PACS B	PACS C
DICOM C-Echo to BH MediStore	✓	✓	✓
DICOM C-Store to BH MediStore	✓	✓	✓
DICOM C-Find of BH MediStore	✓	✓	✓
DICOM C-Move of BH MediStore files	✓	✓	✓
Storage Commit as SCU requests to BH MediStore	See note ¹	✓	✗
Automatic DICOM archiving to BH MediStore	✓	✗	✗
Automatic [Configurable] Pruning of Primary Storage	✓	✗	✗

¹ PACS A versions prior to v11.6 do not support storage commit as an SCU. BridgeHead recommends an upgrade to PACS A v11.6 for customers who wish to take advantage of BH MediStore’s Storage Commit feature which verifies that BH MediStore has archived the study.



BridgeHead Software offers a scalable, future-proof platform to overcome rising data volumes and increasing storage costs while delivering peace of mind around the access, availability and protection of critical electronic patient data.

Trusted by more than 1,000 hospitals worldwide, BridgeHead Software solves healthcare organizations’ backup, recovery and archiving challenges.

BridgeHead’s solutions are designed to operate with any hospital’s chosen software applications and storage hardware, regardless of vendor. This presents healthcare organizations with more choice, flexibility and control over the way data is accessed, protected and managed. The net effect – better utilization of hardware resources and, more importantly, the efficient distribution, availability and use of vital healthcare data.

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For more information on how BridgeHead Software can help lower the cost and administrative burden of managing your healthcare data, contact us at: info@bridgeheadsoftware.com or visit us at www.bridgeheadsoftware.com