Change Healthcare Enterprise Imaging Network

Flexible, scalable storage for all medical imaging data

Change Healthcare offers a comprehensive suite of enterprise imaging solutions that help healthcare organizations see the whole patient, so they can treat the whole patient. The full Enterprise Imaging portfolio - including Radiology Picture Archiving and Communication System (PACS), Cardiology PACS, Vendor Neutral Archive (VNA), and more than 30+ applications, tools, and workflows - provides imaging interoperability to support real-time cross departmental collaboration, which is essential for diagnoses, treatment planning, care coordination, and follow-up.

The tested, validated and supported Dell storage portfolio includes the Dell PowerScale, Dell Unity XT, and the Dell PowerStore platforms. Our mutual customers can review the full validations summary in Change’s published Storage Matrix.

For a consolidated PACS/VNA environment, Dell recommends the PowerScale portfolio, powered by the PowerScale OneFS operating system. OneFS provides the intelligence behind the highly scalable, high–performance, modular storage solutions that can grow with your medical imaging needs. A OneFS powered cluster is composed of a flexible choice of storage platforms including all-flash, hybrid and archive nodes. These solutions provide the efficiency, flexibility, scalability, security and protection for you to store massive amounts of unstructured data within a cluster. The PowerScale storage solution scales quickly and easily, eliminating “forklift” storage migrations caused by the need to continually maintain data over many years. Also, the ability to utilize the system resources (RAM, CPU, network bandwidth) of every node in the cluster for a given request allows PowerScale to meet the demands of fast and reliable access to patient data.

Minimum PowerScale Configuration Requirements

- 4 x H700 nodes with 1 x 3.2TB SSD, 2 x 10GbE front end connections, Dual 100GB Ethernet Switches supporting 100GbE for backend connectivity
- Enterprise Advanced Software Bundle (SmartConnect Advanced, SmartQuota, SmartPools, and SyncIQ needed for Change applications)
- SRS (Secure Remote Service) – VPN connection for remote support and LiveOptics sharing
Additional best practice information

- For capacities larger than 150TBs, you may want to consider a mixed cluster of H700/H7000 and A300/A3000 nodes.
- Encrypted nodes are always recommended, but not required by Change Healthcare.
- Change Healthcare highly recommends the addition of Superna Eyeglass DR and Ransomware Defender.

**Storage**
- Radiology and Cardiology PACS has two tier solution in a Flat File Architecture (FFA) (all-online model)
- Change Image Repository (CHIR) (VNA) has single tier
- FC currently used for VM/App/DB
- NAS used for all image and certain web applications

**figure 1: high level solution diagram**

**Application Server/s**
- Runs interface application, DB, user authentication, etc.
- Performs all back-end processing & communication with the PACS
- Fully virtualized solution on VMware

**MR Database Server/s**
- Oracle SQL
- Memory and CPU Reservations required