Healthcare providers are continuing to invest in radiology and cardiology Picture Archiving Communication Systems (PACS) to predict, diagnose, treat, and monitor disease. With each new imaging modality technology advancement, healthcare provider IT organizations are challenged to meet increasing demands for high availability and scalability of systems and networks, security, and automated tools to simplify the complexity of managing this expanding imaging environment.

Healthcare providers have also recognized the value of virtualization in helping reduce the cost and complexity of their IT operations and many have begun deploying virtualized IT environments to support their PACS and other mission-critical healthcare applications. This has resulted in higher expectations from the IT infrastructure to provide high availability, business continuity, security, and tools to support these clinical applications.

EMC provides solutions to deliver economically highly available applications to healthcare IT consumers. When combined with clinical and business application software from EMC partners, these solutions deliver continuous information availability and protection to enable continuous hospital operations. The EMC® Business Continuity Solution for GE Healthcare Centricity® PACS-IW is an example of this integration and collaboration between EMC and GE Healthcare to provide scalable, repeatable solutions.

Centricity PACS-IW is a web-based solution for all modalities and healthcare environments and offers a wide range of functions at high speed, based on the latest international standards for small and medium-size hospitals and imaging centers. For the first time, Centricity PACS-IW users can deploy a solution integrated with their application with automated failover and recovery processes that can deliver repeatable RPO and RTO objectives.

**ESSENTIALS**

With this solution, GE Healthcare Centricity PACS-IW users can:

- Provide a standard and highly automated failover and recovery solution for all Centricity PACS-IW content, meeting recovery point (RPO) and recovery time objectives (RTO) for business continuity and disaster recovery plans
- Experience “five-9s” availability (99.999% uptime), plus the reliability, scalability, and performance needed by the healthcare enterprise
- Fail over quickly following an unplanned outage lab tested at less than eight minutes in a virtualized environment and less than three minutes in a physical environment
- Lower IT costs by dynamically mapping computing resources to the healthcare enterprise enabling you to treat the data center as a single pool of processing
- Collect audit report data to ensure compliance with security policies and regulations

**SOLUTION OVERVIEW**

The EMC Enterprise Business Continuity Solution for GE Healthcare Centricity PACS-IW is built on a foundation of GE Healthcare Centricity PACS-IW in a VMware virtualized environment supported by EMC unified storage servers. EMC RecoverPoint/CE (Cluster Enabler) and EMC RecoverPoint CRR (Continuous Remote Replication) along with VMware Site Recovery Manager provide the backup and recovery capabilities of this solution.
EMC RECOVERPOINT

EMC RecoverPoint is an advanced enterprise-class disaster recovery solution supporting heterogeneous storage and server environments. It provides bi-directional local and remote data replication across any distance and utilizes continuous data protection technologies to provide consistent point-in-time recovery. RecoverPoint helps accelerate protection and provides operational and disaster recovery of a Centricity PACS-IW VMware Infrastructure without impacting production environments.

EMC RecoverPoint/Cluster Enabler (CE) allows geographically dispersed Microsoft Failover Clusters to replicate their Centricity PACS-IW data. RecoverPoint/CE works seamlessly with applications designed to take advantage of Failover Clusters, such as Exchange and SQL Server in Microsoft Windows 2003 and 2008 environments. EMC RecoverPoint/CRR provides concurrent local and remote (CLR) data protection of the same data volume over any distance.

RSA ENVISION PLATFORM

In order to achieve HIPAA compliance healthcare providers must have the systems in place to capture, collect, and protect data needed for reports required by these regulations. The RSA enVision platform provides collection, alerting, and analysis of log data that enables organizations to simplify compliance and quickly respond to high-risk security events.

Figure 1. The EMC Business Continuity Solution Architecture for GE Healthcare Centricity PACS-IW
VMWARE VCENTER SITE RECOVERY MANAGER WITH RECOVERPOINT

Traditional disaster recovery solutions leave many healthcare organizations unable to meet recovery time and recovery point objectives. VMware vCenter™ Site Recovery Manager (SRM) provides business continuity and disaster recovery protection for VMware virtual environments. VMware vCenter SRM automates the recovery process so it becomes as simple as pressing a single button. All the user has to do is ensure that the production virtual machines are mapped to LUNs that are replicated by RecoverPoint to the remote site. SRM leverages an external replication solution between protected and recovery sites. The workflow that is built into SRM automatically discovers the data stores that are set up for replication between the protected and recovery sites. SRM can be configured to support bi-directional protection between two sites.

SOLUTION VALUE

Testing of the EMC Business Continuity Solution for GE Healthcare Centricity PACS-IW demonstrates that a standard, repeatable, and highly automated failover and recovery solution can be created for all Centricity PACS-IW users, regardless of using physical or virtual deployment. Server virtualization can also result in a lowering of IT costs since the data center can be treated as a single pool of processing, resulting in higher and more efficient utilization rates. In addition, Cluster Enabler protects against node failures at either primary or secondary sites and enables scheduled maintenance by allowing cluster resources failover and failback between sites. The RSA enVision platform protects information from reasonably anticipated threats to security and integrity as well as the unauthorized use of disclosure of that information by addressing every aspect of event logging—log collection, alerting and correlation, incident management and reporting, and analysis for compliance.

By deploying the EMC Business Continuity Solution for GE Healthcare Centricity PACS-IW, a hospital can consistently meet recovery point and recovery time objectives for business continuity and disaster recovery plans while maintaining the privacy and security of patient records. This is achieved by creating highly automated processes for failover and recovery of the Centricity PACS-IW application and the storage platforms supporting those applications. This goal of a rapid restart was achieved consistently in a matter of minutes for a virtualized or physical environment, avoiding extremely costly outages that can take hours or even days from which to recover.