

SteelEye® DataKeeper™ Cluster Edition and Deployment Services Ensures Continuous Availability of Carroll Hospital Center's Electronic Medical Records System

The Company

Carroll Hospital Center is a private, nonprofit medical center with more than 400 physicians on its medical staff representing over 38 medical specialties. Founded by and for its communities, Carroll Hospital Center is governed by a community board of directors whose primary goal is to provide high quality, comprehensive medical services in Carroll County, Maryland.

The Challenge

As the second largest employer in Carroll County, Carroll Hospital Center is committed to providing the highest quality health care for people in the communities it serves. To continue providing superior medical treatment, the organization relies heavily on the availability of its electronic medical records (EMR) system, an application from McKesson called Horizon Patient Folder. With only one primary data processing system, Carroll Hospital Center had long identified the need for a reliable, comprehensive disaster recovery solution to ensure the availability of its EMR system.

In the event of an unplanned system failure or downtime, Scott Livesay of Carroll Hospital Center's network services team estimated a minimum of two to three hours of system downtime before the team could allocate the resources to conduct a manual failover. This lengthy process often required hours and involved secondary SAN mirroring to reconfigure the clients and point to the secondary systems. In the event of extreme system failure, it would potentially require up to six to seven hours before full system availability was restored.

While there are systems in place to ensure patient care is not interrupted, reverting to a manual process is labor intensive and requires the addition of significant resources throughout the facility.

Livesay added, "Each minute of downtime, whether planned or unplanned, is very critical for us. Having a reliable and robust IT infrastructure that can ensure the highest availability of our electronic medical records system is imperative to maintaining our reputation as a leading medical center in the community."

Technology Configuration:

- Windows Server 2003 R2 Enterprise with SQL Server 2005 SP2 Enterprise on DB Servers
- Windows Server 2003 R2 on agent servers
- VMware 3.5.0 Update 3
- HP BladeSystem Servers with direct fiber between database nodes
- Primary site:
 - (1) HP DL580 G5 Database Server 24GB Ram 4 – Quad Core
 - (1) HP BL680 VMware Blade Server 24 GB Ram 4 – Quad Core
 - (1) DL 380 G5 4 GB Ram 2 – Quad Core
 - HP DL 360 G5 4GB Ram 2 – Quad Core
 - (3) HP BL460's 4GB Ram 2 – Quad Core
- Disaster Recovery site:
 - (1) HP DL580 G5 Database Server 24GB Ram 4 – Quad Core
 - (1) HP BL680 VMware Blade Server 24 GB Ram 4 – Quad Core
 - (1) DL 380 G5 4 GB Ram 2 – Quad Core
 - HP DL 360 G5 4GB Ram 2 – Quad Core
 - (3)HP BL460's 4GB Ram 2 – Quad Core



Replicate Any Data. Protect Any Application

For a hospital that experiences more than 315,000 inpatient and outpatient encounters annually for medical care and community programs, any length of downtime presents enormous challenges. Due to the consequences of downtime and the importance of its patient medical records, Carroll Hospital Center set out to configure a comprehensive disaster recovery solution that could meet the organization's rapid failover requirements as well as data replication needs.

The Solution

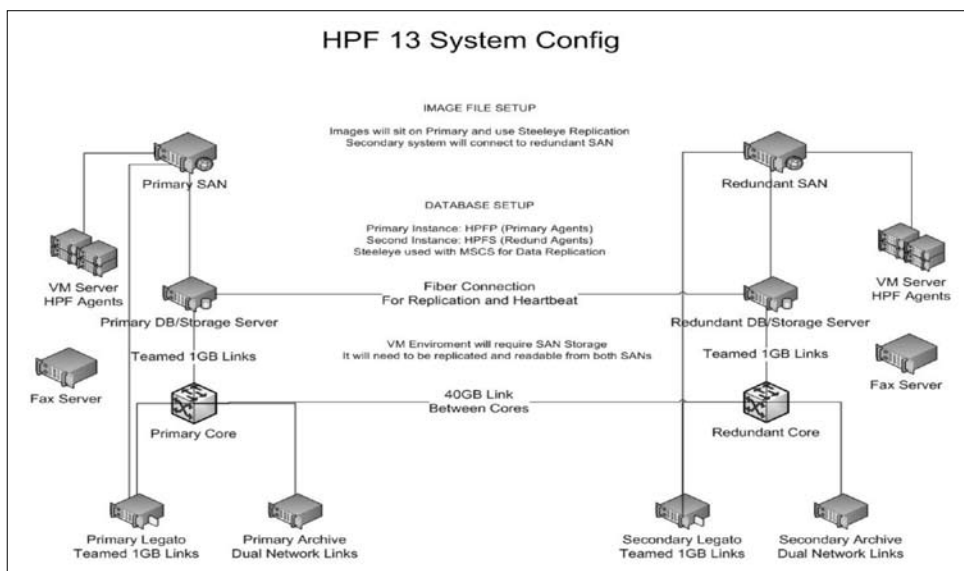
Led by Scott Livesay, the network services team sought to design a cost-effective, yet comprehensive, disaster recovery configuration. Requirements for the system included the ability to fully protect its mixed physical and virtual environment, while integrating seamlessly with the hospital's existing McKesson Horizon Patient Folder EMR application.

When exploring existing functionality with Windows clustering, Livesay and his team determined that a combination of a comprehensive disaster recovery solution with Microsoft Cluster Services would have the capability required to perform the intensive data replication between two separate servers necessary to meet Carroll Hospital's needs. This joint solution would also help avoid the potential risk of a SAN as a single point of failure in a disaster scenario.

After evaluating various software packages, the IT team found that most of the available options were not robust enough to meet their data replication requirements and could not integrate with its back-end applications. That was until IT partner CAS Severn introduced Carroll Hospital Center to SteelEye DataKeeper Cluster Edition.

"Carroll Hospital Center needed a comprehensive disaster recovery solution that delivered both high availability and data replication. SteelEye is the only provider that meets this need by delivering a superior disaster recovery technology and unsurpassed business continuity expertise," said Christine Mirosovich, CAS Severn account executive for Carroll Hospital Center.

With the assistance of onsite SteelEye Deployment Services and support, the implementation of DataKeeper Cluster Edition ran smoothly and took less than six hours. Following a thorough evaluation of Carroll Hospital Center's server configuration, and testing conducted by the SteelEye Certified Engineer, the network services team found that SteelEye DataKeeper Cluster Edition met all the criteria required by the hospital, including a disaster recovery solution that could meet the performance requirements of the organization to keep planned and unplanned downtime to a minimum.



With a comprehensive disaster recovery solution quickly and painlessly implemented, the network services team was able to work with McKesson to ensure that everything, including client configuration, was operational. This involved building clustered database servers with one node in the primary data center and a second node in the remote location with direct fiber running between them. When it came time for the network services team to run the failover test, they were able to easily failover and failback quickly and easily.

Livesay noted, "I've used other disaster recovery solutions in the past and none of them can cover the broad range of issues that SteelEye DataKeeper Cluster Edition can at the application level. SteelEye easily meets our data replication requirements and minimizes the amount of downtime so that our patients can continue to receive the highest level of care."

Benefits

With the implementation of SteelEye DataKeeper Cluster Edition, Carroll Hospital Center now has a comprehensive disaster recovery solution implemented to assure that mission-critical applications such as EMR are always available.

Unlike the hospital's previous stand-alone electronic medical records system, Livesay and his IT team no longer have to waste precious hours during downtime, having to do a manual failover and reconfigure the clients. Instead, Carroll Hospital Center can count on failover time of less than one minute, a small fraction of what it used to be, in the event of system failure or a disaster scenario. And with DataKeeper's ability to provide continuous real-time host-based block level replication to enable the availability of multiple copies of data, Carroll Hospital Center's medical staff is now ensured access to patient records at all times.

The expertise and testing provided by SteelEye Deployment Services also provided the knowledge transfer and understanding of best practices for the ongoing availability of mission-critical applications such as McKesson's Horizon Patient Folder. By accelerating the seamless deployment of Carroll Hospital Center's disaster recovery solution, SteelEye Deployment Services helped Carroll Hospital Center avoid potentially costly periods of downtime during the installation.

According to Livesay, "With a SteelEye Certified Engineer onsite to assist in the deployment of DataKeeper Cluster Edition for Windows, we built the optimal configuration with the ability to test all end cases and receive the training required for ongoing management of our implementation."

The addition of DataKeeper Cluster Edition has not only solved Carroll Hospital Center's problem with data replication, but also solved the failover issue from one site to another without requiring a large investment in overhead and resources. With SteelEye DataKeeper Cluster Edition and SteelEye Deployment Services, Carroll Hospital Center can now ensure that critical patient electronic medical records are always accessible and maintained in the event of a disaster, ensuring the continuation of the highest quality of care for its patients.



SteelEye Data Keeper Cluster Edition allows Livesay and his team to fully devote their time and resources to enabling hospital staff to continue increasing the level of care patients have come to expect from Carroll Hospital Center. As Livesay noted, "Without SteelEye and the combined support from our CEO John Sernulka and CFO Keven Kelbly, I don't see a way we would have been able to come up with a successful comprehensive disaster recovery solution with robust data replication functionality and automatic failover without requiring a lot of overhead and resources."

About Carroll Hospital Center

Carroll Hospital Center, founded in 1961 as Carroll County General Hospital, is a non-profit, acute care facility offering the latest in medical technology, experienced medical professionals in a variety of specialties and a continuum of programs and services to meet the needs of the community.



About CAS Severn

CAS Severn has been working for over 30 years helping companies, government agencies and education sector customers maximize their investments in data management and content management systems, as well as providing infrastructure optimization and operational support. With offices in Maryland, Virginia, Missouri, Colorado and New Hampshire, CAS Severn is run by a seasoned management team with hundreds of years of combined experience.

About SteelEye Technology

SteelEye is the leading provider of data and application availability management solutions for business continuity and disaster recovery for Linux and Windows and virtual environments.

The SteelEye family of data replication, high availability clustering and disaster recovery solutions are priced and architected to enable enterprises of all sizes to ensure continuous availability of business-critical applications, servers and data.

To complement its software solutions, SteelEye also provides a full range of high availability consulting and professional services to assist organizations with the assessment, design and implementation of solutions for ensuring High Availability within their environments.

SteelEye is a subsidiary of SIOS Technology, Inc.
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