



## SIOS DataKeeper® Cluster Edition and Deployment Services Protect Carroll Hospital Center's Electronic Medical Records System

Continuous Availability and Disaster Protection for Critical Applications and Data

"SIOS 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." - Scott Livesay, Carroll Hospital Center network services team



Carroll Hospital Center is a private, nonprofit medical center with more than 400 physicians on its medical staff representing 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

Carroll Hospital Center is committed to providing the highest quality health care for people in the communities it serves. The organization relies heavily on the availability of its electronic medical records (EMR) system, managed by an application from McKesson called Horizon Patient Folder. With only one primary data processing system, Carroll Hospital Center needed a reliable, comprehensive disaster recovery solution to ensure the availability of its EMR system in the event of a sitewide disaster.

Scott Livesay of Carroll Hospital Center's network services team estimated that in the event of a disaster or unplanned downtime they would need a minimum of two hours of system downtime before the team could allocate the resources needed to conduct a manual failover.

This lengthy process often involved mirroring to a secondary SAN reconfiguring all clients to the secondary systems. In the event of extreme system failure, it could take as long as 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."

For a hospital that experiences more than 315,000 inpatient and outpatient visits annually for medical care and community programs, any downtime presents enormous challenges. Carroll Hospital Center set out to configure a comprehensive disaster recovery solution that could meet the organization's rapid failover and data replication needs.

## The Solution

Led by Scott Livesay, the network services team sought to design a cost-effective, 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 considering existing functionality with Windows clustering, Livesay and his team determined that a combination of a comprehensive disaster recovery solution with Microsoft Cluster Services would perform the intensive data replication between two separate servers necessary to meet Carroll Hospital's needs. This solution would help avoid the potential risk of a SAN as a single point of failure in a disaster scenario.

Most of the available options were not robust enough to meet their data replication requirements and could not integrate with its back-end applications. The healthcare provider's IT partner recommended SIOS DataKeeper Cluster Edition. "Carroll Hospital Center needed a comprehensive disaster recovery solution that delivered both high availability and data replication. SIOS 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 the SIOS staff, the implementation ran smoothly and took less than six hours. Following a thorough evaluation of Carroll Hospital Center's server configuration, and testing conducted by the SIOS Certified Engineer, the network services team found that the SANless cluster with SIOS DataKeeper Cluster Edition software met all of their criteria for DR, performance, and high availability.

With their comprehensive disaster recovery solution implemented quickly and painlessly, the network services team had time and resources to work with McKesson to ensure their EMR system, 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. During the system failover test, the network services team easily failed over and failed back the system 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 SIOS DataKeeper Cluster Edition can at the application level. SIOS 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

Carroll Hospital Center now has a comprehensive DR solution that keeps mission-critical applications such as its EMR always available. Unlike the hospital's previous standalone EMR system, Livesay and his IT team no longer waste hours performing a manual failover and reconfigure the clients. Instead, their failover time is automatic and takes less than a minute in the event of system failure or a disaster. SIOS DataKeeper provides continuous real-time, host-based, block level replication delivering continuous access to patient records.

The expertise and testing provided by SIOS 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 DR solution, SIOS Deployment Services helped them avoid potentially costly periods of downtime during the installation.

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

SIOS DataKeeper Cluster Edition met Carroll Hospital Center's need to failover from one site to another without requiring a large investment in overhead and resources ensures 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.

SIOS DataKeeper 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 SIOS 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 SIOS

SIOS delivers innovative software solutions that provide application availability and disaster protection for Windows and Linux environments.

### Clusters Your Way.™

An essential ingredient in any cluster solution, SIOS SAN and #SANLess clustering software provides the flexibility to build clusters your way to protect your choice of Windows or Linux environment – and any configuration (or combination) of physical, virtual and cloud (public, private, and hybrid) storage – without sacrificing performance or availability. SIOS provides unique #SANLess clustering software that eliminates both the cost and the single-point-of-failure risk of traditional SAN-based cluster solutions.

Founded in 1999, SIOS Technology Corp., is headquartered in San Mateo, California, and has offices throughout the United States, United Kingdom, and Japan.

## 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.

