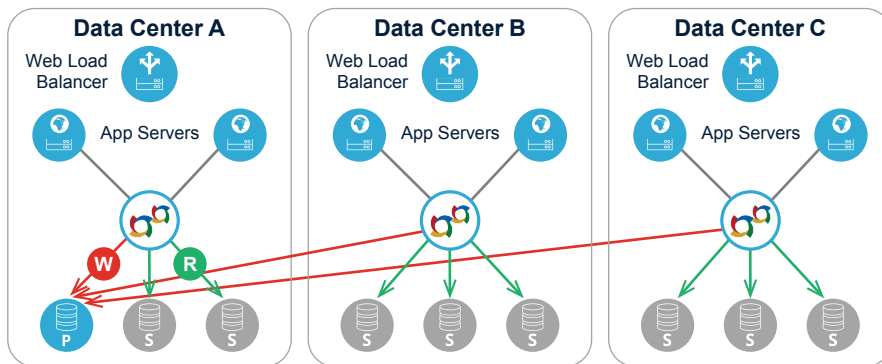


# Handling Expansion in Healthcare Data A Proven Architecture for Scale and Resiliency

The term “healthcare industry” encompasses a large array of services and capabilities. Hospitals and clinics, medical device developers and suppliers, and biopharma each have unique customer bases and requirements, but ultimately they all rely on fast and reliable access to data to run their businesses.

Healthcare data centers are expanding every year, housing highly dynamic, critical information. Data integrity, security and network resiliency is paramount, whether the healthcare company is delivering a patient-critical health record application, like Enable Healthcare, Inc. (EHI), or advanced telemedicine, like Spectocor.

## Spectocor - Architecting for Scale and Resiliency



*Spectocor delivers cardiac monitoring devices that doctors prescribe to patients. Doctors then log into Spectocor's online services to monitor their patients' cardiac events.*

Database load balancing from ScaleArc allows our healthcare customers to transparently scale to handle expansive data growth and to meet and exceed performance demands, both expected and unplanned. Here are a few ways ScaleArc is enhancing day-to-day operations for our customers in healthcare:

- Scale Infrastructure with Business Growth**  
 ScaleArc's load balancing boosts healthcare application performance, increases uptime, and allows for a more robust, scalable infrastructure. In a distributed data model, ScaleArc balances traffic across servers to maintain user experience and functionality, and monitors the replication lag between primary and secondary servers. ScaleArc uses that information to intelligently distribute queries across secondary servers, sending reads only to servers with current data.

- **Maintain Uptime and Data Consistency**

ScaleArc enables 100% uptime for healthcare applications. ScaleArc is unique in delivering automatic database failover that is transparent to the application, shielding healthcare apps from downtime and preventing errors in patient-critical applications. ScaleArc instantly and transparently routes database traffic around downed servers – even across multiple data centers – to maximize uptime.

ScaleArc ensures data integrity with powerful failover capabilities. If a query dies in the middle of a session, ScaleArc automatically alerts the application to retry the action. By not committing writes on behalf of the database, ScaleArc protects transactional integrity during failover. Additionally, by leveraging its surge queue, the ScaleArc software can hold incoming queries in queue while the new primary takes over, dramatically reducing application errors that typically occur during database failover. As a result, database failures become virtually unnoticeable in a ScaleArc deployment.

By scaling transactions across multiple servers, ScaleArc increases query volume capability. Secondaries could be used to serve only data while ScaleArc performs read/write splits automatically on behalf of the app, with no code changes. This instant scalability delivers high capacity without compromising transactional integrity.

- **Increase Visibility and Deliver Real-time Analytics**

Without adding any performance overhead on the application or database, ScaleArc's comprehensive and real-time analytics gives visibility into 100% of SQL traffic. This allows healthcare providers the ability to reduce troubleshooting times significantly and prevent performance issues.

With a complete view of all SQL connections – even those running across multiple data centers – one can easily identify problematic queries, troubleshoot application performance, and assess the impact of interactional application behaviors.

ScaleArc can take billions of lines of logs and data, rapidly extract key query patterns, and visually display the findings – instantly highlighting items like slow and frequent queries that are an opportunity to improve database operations.

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“We have exponentially growing patient data and zero tolerance for downtime. The ScaleArc software enables my team to handle our hypergrowth while maintaining continuous availability.”

– Joe Khan  
CIO  
Spectacor



## ScaleArc Benefits the Healthcare Industry

ScaleArc's database load balancing software deploys transparently between healthcare applications and SQL database infrastructure. ScaleArc leverages database replication and failover to deliver continuous availability of applications, and enables healthcare companies to:

- Scale on demand to keep up with dramatic data growth and traffic surges without touching a single line of application code
- Support electronic medical record requirements and act as an application-layer firewall to provide added security and confidentiality
- Operate at 100% uptime with automatic failover, delivering zero downtime for maintenance, upgrades, and security updates
- Increase performance through read/write split that turns idle secondary servers into active servers
- Provide real-time actionable analytics for instant troubleshooting capabilities as well as the ability to control application behavior from outside the application

## Conclusion: Better Healthcare Apps with ScaleArc

ScaleArc provides an ideal solution for healthcare companies by increasing availability and resiliency, improving manageability, and delivering the capability to handle exponential growth in patient data. Leveraging ScaleArc, healthcare applications can transparently deliver massive scalability and availability, local data delivery, automatic failover, 100% uptime with zero-downtime maintenance, and finely granular analytics.

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“After witnessing ScaleArc in action in our own environment, within minutes we were completely blown away by the idea of being able to manage a dramatic growth in data volumes without touching our databases or modifying a single line of application code.”

– Indraneel Shah  
founder and CTO  
HyperWiser, advisor to EHI

