



SURGICAL INFORMATION SYSTEMS™

CASE STUDY

**Speedy provisioning and
quality testing delivers new
features into customer's
hands faster**



Contents

The Customer

Surgical Information Systems (SIS) brings a smarter, tech-enabled approach to managing surgery centers with its Ambulatory Surgery Center (ASC) software. Currently about 2,300 ASCs and hospitals rely on SIS technology.

The Challenge

The development database estate was based on large, shared servers with 100s of databases. Not only was this time consuming, deployments were error prone due to ineffective testing, leading to increased cost and time.

The Solution

The goals were faster provisioning and increased automation, with teams able to perform their own resets. Redgate's test data management solution created a self-service infrastructure where the team can work effectively.

The Results

Improved automation and faster provisioning increased the frequency and quality of their development and testing cycles, but most importantly they can now get fully tested new features into their customer's hands faster.

“Development and testing cycles were delayed, which delayed time to market for new features.”

Ryan Burg, DevOps Manager

The Customer

Founded in 1996, Surgical Information Systems (SIS) solutions enable outpatient Ambulatory Surgery Centers (ASC) to take a smarter, more tech-enabled approach to every aspect of managing surgery centers. Focused on meeting the needs of customers, SIS solutions allow patients and physicians to interact across Electronic Health Records (EHRs), scheduling, billing, mobile access and more.

With many doctors not directly employed at these centers, this real-time, interactive access is essential. Currently ~2,300 ASCs, and more than 10,000 operating rooms rely on SIS technology to help them operate smarter and more efficiently.

SIS has been ranked #1 for ASC EHR by KLAS Research for the second year running, awarded as a Top Workplace in the USA^[1], and retained the #1 spot as the leading ASC software by Black Book Research for the eighth consecutive year.^[2]



Headquartered in Alpharetta, GA, SIS also has offices in Hungary and India. The global development team includes developers, quality control teams, DBAs, and analysts. The DevOps team is based in the US and India, managing the build release, testing automation, infrastructure automation and cloud architecture for all of the development and QC environments. With up to 100 environments in use at any one time and a range of development and production databases up to 500GB in size, the goal is to deliver value into the hands of end users faster.

~2,300

**AMBULATORY SURGERY CENTERS AND HOSPITALS RELY
ON SIS TECHNOLOGY**

10,000+

OPERATING ROOMS RELY ON SIS TECHNOLOGY

“Redgate’s test data management solution gives us a minimum total time saving of about 12 hours per day across all of our teams and three continents.”

Ryan Burg, DevOps Manager

The Challenge

Ryan Burg has been at SIS for around seven years and, as DevOps Manager, is responsible for managing the entire database estate of large, shared SQL servers with hundreds of databases. While there was some automation built into the development pipelines, there were a lot of manual steps that required human interaction. This was good for the initial provisioning of database copies for use in development and testing, but because the provisioning process took so long, there were compromises.

Developers were using copies which were much smaller than the production environments. This was the norm because they needed to keep them small to be efficient. When the QC teams ended a test run and needed to refresh their copies, they would have to call someone to go in, drop the copy and restore it manually. The team was affected daily by the time it took to restore the database, and then drop and restore again after a test run.

As well as being laborious and time-consuming, deployments were also impacted. The teams would run into failures caused by ineffective testing due to the infrastructure limitations, resulting in cost increases and time delays. Development environment updates were infrequent due to the time required, and long restore operations would queue up requests, causing a compounding effect. As Ryan recalls: *“Development and testing cycles were delayed, which increased time to market for new features.”*



The team also had issues with database management. It was difficult to know the lifecycle of each database, when it was created, who created it, what team was using it, and whether it was still needed. This used a lot of disk space because each environment had its own copy of the databases and, as a result, they often ran out of space. It also proved to be very expensive with spiraling licensing and database costs.

The risks to the business at this stage were predominantly rising costs and a longer time to market, but there was also the impact on the teams themselves. The QC teams could not refresh environments, making them dependent on others, and the delays impacted their testing because the cost of a refresh was so high. This led to inefficiencies throughout the entire process.

“Faster feature release is certainly one benefit. Others have been standardized environments, reduction in management and maintenance overheads, and improved efficiencies.”

Ryan Burg, DevOps Manager

The Solution

To evolve and improve, Ryan knew they needed to look externally for third-party solutions.

For Ryan and the DevOps team their success metrics were faster provisioning and increased automation; the ability for teams to refresh their own database copies; improved database lifecycle management; and multi-platform functionality.

Ryan was happy with their choice: *“We have met all of our objectives with Redgate’s test data management solution. Each team member has been empowered to work effectively and independently. Provisioning is now fast, fully automated, with a complete self-service infrastructure that can move at the speed of our dev teams.”*

At any given time, the teams are normally running around 100 environments, creating an average of ten new environments, and updating current environments 20 to 30 times per day. To understand the impact of this, creating a new environment used to take up to 60 minutes, while environment updates, to push new code or refresh after a test took 30 minutes.



Redgate removes those constraints by using virtualization technologies to create database copies that are a fraction the size of the original, and can be created, updated and refreshed quickly and easily. It now takes ten minutes for the team to create a new environment, including all aspects of the infrastructure, with updates down to an average of less than five minutes.

While predominantly SQL Server based, SIS has some products on Oracle and had started to look at bringing in PostgreSQL for some of its new services. For the team it wasn't a matter of finding Redgate's test data management solution to support their PostgreSQL databases, it was that having the tooling opened up the opportunity to them to expand their use of it.

As Ryan comments: *"One of the value props for Redgate's solution is that we wouldn't have used PostgreSQL if it hadn't been so easy for us to implement it. The infrastructure was already there, so I'm not having to create a new infrastructure just to support it. It's actually driving our adoption of PostgreSQL more quickly than we would have on our own. If we can reduce even a little of our licensing costs, it might pay for itself."*



The Results

Previously the large, shared SQL servers would take hours to refresh and restore, actively discouraging developers and testers from using large test databases. QC teams typically worked on smaller, more lightweight test databases because they could quickly iterate through them.

Now that they have Redgate's test data management solution, they are starting to adopt larger test databases because there is no additional cost or time factor. As Ryan outlines: *"It's a huge advantage for our team that they're now encouraged or incentivized to use richer, larger databases that are more real- world realistic"*. As a result, the teams have been able to measure an increase in quality through better testing and a decrease in time to delivery.

When refreshing a database has a serious cost to it, as we saw at SIS, the teams end up testing in a way that is less than optimal because of time and cost constraints. Now they have reduced that cost to just seconds, removing the barrier to running optimal testing, giving them better test results. As Ryan highlights: *"Since we started using Redgate, our defect rates have gone down and our quality has gone up."*



The drastic reduction in time to both create and update environments has led to an increase in the amount of testing that the team can get done in the same timeframe, but there's also the reduction in the time to delivery. Ryan details this as one of the key business benefits from implementing Redgate: *"We want to get new features in our customers' hands. Now we can do twice the amount of testing in the same amount of time, we have better testing, we've lowered that cost, but we are also lowering the time to market".*

He adds, *"Faster feature releases is certainly one benefit. The other has been standardized environments, a reduction in the management and maintenance overhead, and improved efficiencies in terms of testing capabilities and team self-service."*



A deeper dive into how Redgate's test data management solution helped

Ryan outlines the big advantages: *"The teams love the capabilities that Redgate gives them. Our infrastructure can now move as fast as our development teams. Our QC Teams can run isolated tests as often as they wish because the cost of resetting the environment is down to mere minutes, with the database component only taking seconds."*

Upon implementation, the team built a new set of automated Azure DevOps pipelines that leverage the Redgate test data management technology, enabling them to create, update and delete environments quickly and easily.

One definite win for Ryan and his team was the minimal effort needed to really master the product, and from the developer and QC perspective, there was almost no learning curve because the entire process has been automated for them through the normal development pipelines. This meant that everyone involved was up and running fast, and they started to see the benefits almost instantaneously.



The Command Line Interface (CLI) was also noted by both the DevOps and System Admin teams as easy to pick up. As the teams started to independently utilize the CLI, their learning curve was minimal, as Ryan explains: *"due to the well-structured command syntax of the product, the CLI help, and the extensive online documentation."* The cross-platform nature of the CLI proved popular with the mix of Windows and macOS developers within the team, as well as their Linux-based deployment agents.

The team wanted the ability to create isolated instances across multiple platforms and reduce their overall reliance on Windows Virtual Machines. Redgate's solution enabled all of this with additional unique capabilities such as promoting containers to images, which the team have built into their pipelines.

As a healthcare organization, SIS is also heavily regulated by Personal Health Information (PHI) requirements and the Health Insurance Portability and Accountability Act (HIPAA) in the US. Uncomfortable with putting their data in the cloud, they were looking for an on-premises product they could be much more hands-on with. This was another big win for Ryan and the team: *"The fact that we were able to get the same capabilities as the cloud, but have it hosted on-prem, met all of our compliance requirements ."*



[\[1\]](#) KLAS Research - KLAS Research Rankings - “2023 Best in KLAS: Software and Professional Services”, “2022 Best In KLAS: Software and Services”

[\[2\]](#) Black Book Research Rankings - “Top ASC Software & Services Solutions” February 2023, “Top Technology Solutions: Ambulatory Surgical Centers” March 2022, “Top Technology Solutions: Ambulatory Surgical Centers” March 2021, “Top Technology Solutions: Ambulatory Surgical Centers” February 2020, “Top Technology Solutions: Ambulatory Surgical Centers” April 2019, “Top Ambulatory Electronic Health Records Solutions: Ambulatory Surgical Centers” April 2018, “Top Electronic Medical Records/Electronic Health Records Vendors” April 2017, & “Top Ambulatory Electronic Health Records Vendors Comparative Performance Result Set of Top EHR Vendors,” May 2016.