



CASE STUDY

Scaling secure cloud operations with SQL Toolbelt Essentials



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The Customer

A fast-growing provider of GPS-based routing and logistics software for critical public services—including schools, trucking companies, and law enforcement agencies across North America.

The Challenge

Transitioning to AWS from a legacy on-premises infrastructure, they initially performed a lift-and-shift migration. However this still left them facing schema drift, error prone releases and customer resistance.

The Solution

SQL Prompt, SQL Compare, SQL Data Compare, and SQL Source Control, within the SQL Toolbelt Essentials bundle, have become foundational to their ability to scale securely and efficiently in the cloud.

The Results

As an organization they have now achieved faster troubleshooting, reduced costs and enhanced scalability within the cloud. With the team improving release confidence, developer productivity, and operational resilience.

“Going to the cloud enabled us to move faster. But now that we’re moving faster, we need to adjust all of our processes to also move at the same pace.”

Senior Data Architect

The Customer

A fast-growing provider of GPS-based routing and logistics software for critical public services including schools, trucking companies, and law enforcement agencies across North America. An industry leader, they are used extensively by more than 2,000 school districts and municipalities across almost all US states.

As an organization their core goal is to increase wider adoption of their software, which has seen a huge push for horizontal scaling technically and the need for growth. Over the past 5 years they have averaged around 20% year-on-year growth. *“It’s a good problem to have but our biggest technical hurdle is growth across the business. The data and the software are growing very fast in terms of complexity, features and size. Maintaining security, scalability and performance is huge”* explains the Senior Data Architect.

With over 3,000 databases and a data footprint exceeding 50TB, the company needed a scalable, secure, and efficient way to manage schema consistency, deployments, and performance. They faced the challenge of migrating and modernizing a highly sensitive and complex SQL Server database estate from a legacy on-premises infrastructure to the AWS cloud.



3,000

DATABASES

50TB+

DATA FOOTPRINT

20%

GROWTH YEAR-ON-YEAR

“Each Redgate solution was a building block that we chose to solve a problem”

Senior Data Architect

The Challenge

GPS data is huge, and it grows very fast. As the Senior Data Architect outlines *“There are some apps where we pull data every 5 or 10 seconds. So, devices are pouring in data, and we have to ensure that the customers have what they need, we have what we need, but it’s not just piling up.”*

On top of this, all of their databases contain sensitive, time critical data about students, police officers, drivers and staff. So, if mistakes and outages happen there’s real world repercussions. With schools or a trucking company, there can be downtime for maintenance at certain times of the day because no one’s using the systems in that window. But, for the Police that’s not an option, it’s a 24/7 system. Any outage, at any time is a potential disaster.

So, scalability, security and performance were ultimately the top priorities as they grew. The Senior Data Architect summarizes how he knew things had to change, *“As the data gets bigger, the app gets more complicated. Everybody always wants new features, and the direct result of that is now we’re hitting our data in more complex ways. So, we had to find ways to simplify as much as possible.”*



The organization's legacy on-premises infrastructure was fragmented and difficult to support. Each customer had their own environment, leading to inconsistent configurations, prolonged outages, and inefficient troubleshooting. To combat these challenges, the organization started their transition to AWS with EC2-hosted SQL Server instances.

For the initial migration stage, it was very much a lift and shift. They wanted to get out of on-premises at all costs, and didn't make a lot of architectural changes. While that was going on they began building brand new, cloud native versions of all of their apps, and that was the bigger challenge that took years. As the Senior Data Architect outlines, *"once we had that, we were able to start migrating people to a real cloud, native solution."* But, this came with its own set of challenges though:

- Schema drift and deployment complexity across thousands of databases
- Manual, error-prone troubleshooting and performance diagnostics
- Lack of confidence in release quality, leading to production issues and developer burnout
- Customer resistance to cloud migration due to concerns about reliability and cost

“Redgate enables us to manage our mountain of data, apps, servers, and code in ways we couldn't otherwise. Without it, it's chaos.”

Senior Data Architect

The Solution

As the organization continued to grow, manual tasks like keeping schemas in sync with deployment scripts became more challenging, time consuming and error prone. The Senior Data Architect outlines how their development processes were no longer fit for purpose, *“when things went wrong, we couldn't always find them before they reached production. That was a new challenge which didn't arise before, because we were smaller. As we continued to grow how do you keep 2,000 or 3,000 databases in the exact same schema, with no deviation? After 78 little things went into development, how do you ensure that the beginning and end is correct?”* Ultimately these issues began impacting customers through the quality of releases, *“We release software that has bugs or problems, and that makes everybody miserable.”*

He went on to explain how the decreasing speed of development was affecting the wider team. *“The more awkward and cumbersome our processes are, the harder it is for us to get our jobs done quickly and efficiently. We're making more mistakes and having to double check things more often, so we waste more time on manual processes. It just slows down development.”*



As a result, the team started to build their own tools to help streamline processes, improve release quality and save time on the manual tasks but swiftly found this was not a good use of their time due to the complexities and continued scaling. The Senior Data Architect had used Redgate solutions at a previous organization and suggested looking at the SQL Toolbelt Essentials offering. Made up of ten tools to aid database development best practices, the team saw instant results. They focused on four tools key to solve their current challenges:

- SQL Compare & SQL Data Compare: Enabled rapid, reliable schema and data comparisons across environments. These tools were instrumental during the lift-and-shift phase to validate consistency between on-prem and cloud environments.
- SQL Prompt: Accelerated development by reducing manual query writing and improving code quality.
- SQL Source Control: Helped standardize and automate database versioning, enabling repeatable, confident deployments.



The Results

With the implementation of Redgate's SQL Toolbelt Essentials *"each Redgate solution was a building block that we chose to solve a problem"*.

- **Faster Troubleshooting:** Issues that previously took hours to diagnose were resolved in seconds using SQL Compare and Data Compare.
- **Improved Release Confidence:** Redgate tools enabled the team to validate schema consistency and deployment accuracy, reducing post-release firefighting and downtime.
- **Developer Productivity:** Developers have saved 30 minutes per day thanks to SQL Prompt, translating into significant cost savings and faster delivery cycles.
- **Operational Resilience:** Downtime dropped from days to minutes per year. The centralized cloud model, supported by Redgate tooling, allowed for proactive monitoring and faster support response.
- **Scalability:** The team could confidently manage thousands of databases with consistent schemas, enabling horizontal scaling and leaner licensing strategies using SQL Server Web Edition.



The Senior Data Architect outlined that the team utilized SQL Prompt, SQL Compare and SQL Data Compare for development and troubleshooting, because they could very quickly go in and find out if there's a problem. They could check if the release was correct, compare schemas and diagnose problems with a single click. *"SQL Compare and SQL Data Compare saved us a mountain of work because we could just click 'compare' and 30 seconds later there's our result. No other tool in the industry does that and certainly doing it by hand sucks."*

Even when they originally started building their own tools, the Senior Data Architect explains that *"I built the tool that made sense for me at the time. But then, 3 months later something changes, and that tool doesn't work anymore. Whereas this out of the box solution just works and it always works."*

In terms of development, with SQL Prompt *"every technical employee that writes code is now saving a minimum of 30 minutes a day where they would previously have just been typing code."* When you calculate this saving based on the number of employees, days per year and salaries per hour, the team could clearly demonstrate a return on investment. *"I think of it in terms of what's my salary. Because when all else fails and when no one knows to do, they call on the architecture team. And you don't want us solving production problems as that's a resource waste. You're taking some of the highest paid people in your company and having them troubleshoot performance in production for a week."*



The Senior Data Architect goes on to explain the role that SQL Toolbelt Essentials, with SQL Compare and SQL Data Compare specifically, played in their cloud migration. The basis was to check and make sure the before (on-premises) and the after (in AWS) were the same. *"We could compare templates and reality to verify that things were working. That functionality was huge and allowed us to deploy releases faster and validate releases faster. Putting a new customer into production was just 30 seconds of scripting, run the script, and it all magically happened. Whereas it used to be so cumbersome".*

At the end of the day, *"minimizing downtime and maximizing performance means everyone's happier, and customers are more likely to keep using our software".*

What's next?

The Senior Data Architect outlines that these tools are being used now, more than ever, with their data estate and customer base growing 20% year-on-year. *"We can develop fast and verify that our code is being deployed correctly. It's hard because we have so much data, but it's now possible and Redgate is what makes it possible. There isn't an alternative that I could think of in the industry that would do a better job".*



As the organization continues to scale, new challenges have emerged, particularly around performance testing. So, they are now exploring Redgate's Test Data Manager and Flyway to:

- Automate performance testing across diverse customer datasets
- Improve root cause analysis for production issues
- Enable repeatable, scalable QA processes