Red Gold ensures freshest tomato products through healthy databases

Spotlight® on SQL Server Enterprise is the secret ingredient for peak database performance

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Matt Andrew, Database Manager, Red Gold

BUSINESS NEED

Red Gold, Inc., a family-owned tomato processor that sources its tomatoes from family-owned farms, has grown into the largest privately held tomato processor in the US. Its extensive infrastructure includes factories, logistics, inventory and distribution that depend on well-performing SQL Server systems. When two of their IT resources left the company, it created an experience gap that challenged the new junior DBA to learn the systems and keep everything available and performing at peak efficiency.

SOLUTION

Spotlight® on SQL Server Enterprise improved database performance monitoring, simplified issue diagnosis and accelerated problem resolution. Spotlight contains out-of-the-box, industry-standard thresholds that enabled Red Gold to benchmark performance and quickly identify ways to improve it. Red Gold easily adjusted thresholds, set up notifications and automated event responses, taking the pressure off the new administrator as he ramped up.

BENEFITS

- Proactive performance monitoring reduces end-user frustration and helpdesk calls

- Detailed drilldown and help text for each data attribute speeds root-cause identification

SOLUTIONS AT A GLANCE

- Database Performance Monitoring

Red Gold, the largest privately held tomato processor in the United States, runs highly automated manufacturing facilities and a distribution center that's more than a million square feet. The company relies on SQL Server databases to manage their complex operations. With factory automation, perishable inventory, tight packing timelines and logistics at stake, proactively ensuring peak database performance and uptime is critical.

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PERFORMANCE REQUIRED

Red Gold encompasses three manufacturing plants, a distribution center, a trucking/logistics company and a corporate office, all located in Indiana. An enterprise fleet of 10 production SQL instances, three dev/test instances and more than 250 virtual machines are hosted across multiple data centers. During the two-month tomato pack season, all manufacturing facilities operate 24x7. The distribution center operates nearly 24x7 year round. To support their regional brands, Red Gold must ensure their IT systems are highly available and operating efficiently.

"Without the systems, it would greatly reduce the throughput of the factory," says Matt Andrew, Red Gold Database Manager. During the months when fresh tomatoes must be packed, processing must meet the pace of the trucks hauling in perishable goods or risk spoilage. "When the technology stops, the tomatoes do not," notes Andrew. "They continue to be delivered." All year long, Red Gold processes and labels tomato paste products to meet inventory and market requirements.

CATALYST FOR CHANGE

During the early- to mid-2000s, Red Gold became reliant on SQL Server, in addition to the IBM i platform. Red Gold realized an "accidental DBA" was not sufficient to manage these mission-critical systems, so around 2008, they hired more experienced DBAs. In 2011, two seasoned SQL Server database professionals left Red Gold within three months of each other, creating an expertise gap that the company, with its rural setting, strug-

gled to fill. They transitioned Andrew, at the time an internal application support specialist, into a junior DBA role. As a stopgap, until he learned how to work with the SQL farm he'd inherited, they entered a partnership with a remote DBA firm.

With no highly skilled SQL Server mentor in house to help Matt gain SQL Server expertise, and an unproven remote DBA relationship, Red Gold decided to invest in a software solution to bridge the gap. "We did evaluate different tools, and considered using Native SQL Server alerting and monitoring," says Andrew. "After several software evaluations, we decided that Spotlight on SQL Server Enterprise provided the most well rounded, easy-to-use, easy-to-implement, cost-effective and overall robust solution. Really what it boiled down to was the quick and detailed drilldown. The quick visual representation of the current state, the ability to go back in time and see what the attributes were." Brian White, Red Gold's Senior Manager of Applications and Project Management, adds, "We had some monitoring and alerting developed in PowerShell; however, we were not interested in recreating the wheel. Spotlight on SQL Server Enterprise provided us everything we were initially looking for and much more that we didn't even know we needed."

PRODUCTS & SERVICES

SOFTWARE

Spotlight on SQL Server Enterprise

Quest

DELIVERING THE GOODS

Using Spotlight, Red Gold quickly and easily monitored not only the production SQL instances, but also many of the application group's virtual machines. The out-of-the-box, industry-standard thresholds helped Red Gold understand the state of its server farm. "I didn't have that level of knowledge to be able to find all of those thresholds myself from the get-go," says Andrew. "So having a solution that could work for us allowed us to benchmark where we were at and then define where we wanted to be." As Spotlight collected data trends, Red Gold easily adjusted thresholds, set up notifications and even automated event responses, all while being non-intrusive and agentless.

Andrew found the help text for each data attribute extremely useful. Not only did Spotlight provide information about performance, but it also educated him on what the data was, how it affected SQL and the OS and provided tips to resolve the root issue.

ROOT OF THE PROBLEM

"We're always trying to make decisions with data," says White. "Without a tool like Spotlight, really our only option was to throw more processor, throw more RAM at some system, to hope the performance issue gets better. With Spotlight, we knew exactly what the problem was and what it wasn't."

One example of this was Andrew's use of the Spotlight recommendation for tempdb configuration. "Prior to Spotlight," says Andrew, "we would get reports of performance issues, slowness and what-have-you without any tool to quickly diagnose the issue. Without that deep understanding of how SQL Server works, it was a struggle to identify a root cause and a mitigating action." Following the Spotlight recommendations, the proper number of files, equally sized, with auto-grow turned off, significantly improved the performance of several SQL instances.

The Spotlight playback function, which reviews server activity prior to an event, has greatly helped Red Gold with root-cause analysis, enabling them to quickly identify things like anti-virus resource usage, application memory leaks and Windows updates as root causes of performance or stability issues. "We recently had an anti-virus upgrade across our entire enterprise," says Andrew. "As soon as it started to roll out, we noticed a lot of high CPU and low memory alarms across all servers, whether it was SQL Server or an application server. Using that Spotlight playback feature, I was able to go back to the point of time of that alarm and see what exactly was running on the system, how much resources it was using, and pinpoint the specific feature of that anti-virus and what it was doing to our servers. That, in turn, allowed us to engage the vendor of the anti-virus to apply the latest service packs and hot fixes to mitigate the performance impact."

"The key thing that stands out for me," says White, "is as we looked at some of these other packages, almost all of them could let you know what's happening now. And that's great to know and can certainly help you out. But Red Gold tries to apply lean and agile methodology in the manufacturing area and certainly in IT. So we're always looking to find, OK, what's really the root cause of the scenario? So that we can prevent it from happening in the future. And we feel that Spotlight's ability to look back into the past helps us get to that root cause more than the tools we considered."

SECRET SAUCE

Before implementing Spotlight, the Red Gold database team used native SQL Server alerts, some PowerShell, and resolved problems reactively and manually. Now they work proactively, with consistent, automated routine administration. Red Gold uses the Spotlight automated event action to run a Power-Shell script when a specific file is in use. The script performs a lookup of the user holding the file lock and emails the user, requesting the file be saved and closed so it can process.

In addition, Red Gold uses the Spotlight custom counter feature to create a chart containing the transaction queue counts for various application processes, providing a unitary view of all queues. Defining custom thresholds and custom actions ensures that IT is alerted to processing issues before the user community notices. This has not only increased system reliability, but it also reduced user frustration and service calls to their help desk.

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BRIGHT FUTURE

"Brian finds things for me to do," says Andrew. "As time has gone on, I've developed into more of a project management role and less into the database administration. Spotlight has allowed me to let the tool do a lot of the administration. It makes the recommendations and allows me to focus on project work."

Says White, "Spotlight has really allowed us to deliver more projects more quickly and added more value to Red Gold than if Matt was just sitting in front of his computer waiting for something to happen. So he's much more than just a database admin. You know, we could outsource that, but I can't outsource Matt's knowledge of the business and his know-how to get things accomplished in our environment. Spotlight is a tool that enables us to better leverage Matt as a resource and, as importantly, an opportunity for him to grow in his career."

Red Gold maintains a collaborative relationship with Quest® Support, which they characterize as "extremely expedient and accommodating." In addition, they appreciate the periodic check-ins from Quest to ensure Red Gold is using new features and getting the most value from the product.

Says Andrew, "Red Gold will continue to incorporate Spotlight for SQL Server Enterprise into our technology tool belt and looks forward to the future enhancements to the product. Spotlight has enabled us to do more with existing staff and has prevented the need for headcount increases."

He concludes, "I was more than pleased with Spotlight from day one. In the trials that we did, Spotlight was far and away the most impressive to me, and I have not looked back since."

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