



Quest's Spotlight performance management driven by Azure SQL Database

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Software Engineering, Quest*

QuestTM

If you're a database administrator, one of the things that likely keeps you awake at night is concern about how secure your data is. Quest, an independent software vendor (ISV), has a product designed to help you sleep better. Quest offers its Spotlight on SQL Server Enterprise service with one goal in mind: to give database professionals the best tools available for securing data, moving that data around, and monitoring database operations. With Spotlight, using Microsoft Azure and Azure SQL Database, SQL Server database administrators can monitor, detect, diagnose, and provide a way to resolve performance issues in SQL Server, whether they're sitting at their desks or are working from home.

Performance management matters a great deal, according to Patrick O’Keeffe, Executive Director of Software Engineering at Quest. “Performance management correlates with cost management. If you can halve the execution time for a particular query that runs all the time, you’ve just halved your costs. And this is particularly true now in the cloud, where people are being charged by the minute to run workloads.”

The Spotlight product line has a fairly long history at Quest, starting in the late 1990s with Spotlight on Oracle. A SQL Server–specific version came along in 2002, which was at that time largely a desktop product. In the years since, Spotlight has changed significantly into its current form as Spotlight Essentials, a hybrid offering for the cloud and on-premises.

“Spotlight—thanks in great part to the Microsoft stack it sits on—helps differentiate Quest from other ISVs,” O’Keeffe says. Other companies provide similar services, but Spotlight’s cloud element puts Quest ahead of the game. “A lot of our competitors, particularly in the database-specific realm, have still not come up with solutions that support customers who want to go to the cloud,” he adds.

Quest not only offers experience in the space, it also has a long-established willingness to do the hard work so its customers don’t have to. “Before these products came on the scene, people would have to do setup monitoring by hand,” O’Keeffe says. “We’ve been doing this professionally for the last 20 years as a company, and I can tell you from experience that it was hard for us to build it. For each individual customer to ‘hand roll’ its own monitoring solutions is probably untenable.”

Spotlight offers insight into what’s wrong

Spotlight on SQL Server Enterprise is not just about monitoring. “Our goal is to tell our customers not only that something is wrong, but what the problem is so they can to fix it,” O’Keeffe says. That is done with diagnostic workflows, including detailed wait state/workload analysis and deadlock detection, and more than 70 diagnostic drill-downs. The product can be deployed both as an on-premises solution and as a hybrid solution that includes the Azure cloud platform. The hybrid model provides a website that offers the same functionality users get with the on-premises experience. Finally, there’s a mobile piece, a Spotlight app, which also takes advantage of the cloud.

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Customer Name: Quest
Industry: Professional Services
Country or Region: United States
Customer Website: www.quest.com
Employee Size: 3,000

Customer Profile

Quest is a US-based independent software vendor whose goal is to make information technology work harder for its business customers so they can focus on business innovation. With an employee base of 3,000 and revenues of about \$1 billion in 2016, Quest builds community-driven software solutions that help customers modernize datacenters and get to the cloud quicker. Quest provides the expertise, security, and accessibility customers need to expand their data-driven business.

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The solution includes a back-end management monitoring piece, the Diagnostic Server, in the customer's datacenter that collects SQL Server data. O'Keeffe says, "It evaluates those data collections against a set of rules, and if the rules fire, we get alarm states." For example, it might collect CPU percentage data from a particular server and evaluate that against the rules. The end users will then be alerted by email, a message on their console, or a push notification on their iPhone or Android device.

Azure SQL Database provides In Memory OLTP, which offers real-time operational analytics in the database in which we utilize in-memory OLTP. As monitoring data comes in (either from on-prem or in the cloud) through the API, the database is updated with state information from previous collection from a particular monitored database instance. This "last-seen" data is then used for display purposes in the mobile and web presentations at spotlightessentials.com.

Spotlight on SQL Server Enterprise can be deployed both on-premises and in the cloud. The cloud part of Spotlight, which is called Spotlight Essentials, is built in Azure. Spotlight uses Azure SQL Database In-Memory OLTP to meet the latency requirements for improving

performance of transaction processing. "[Azure SQL Database] In-Memory OLTP is the only tool that we could find that met the latency requirements that we had," O'Keeffe says.

Product is mature, popular

Spotlight, which is being used by about 2,000 of Quest's business customers, is now in its eleventh version, with version 12 due to be released early this year. The Spotlight development group includes teams in Israel, China, and Australia. The cloud part of the service is built on a microservices architecture, using continuous integration and deployment. Development is done using agile development methodologies.

"There are 20 to 25 different microservices involved on the cloud end, all in varying degrees of maturity; some services analyze data to provide a capacity planning feature," O'Keeffe says. "Data Ingest is another microservice; on the main data ingest endpoint. We get data from about 100,000 different SQL Server instances that we monitor, spread across a couple thousand customers." And if a customer is using "the mobile functionality and the web functionality, we're sending data continually from the customer's datacenter to the cloud all the time as we're monitoring data."

Customers are happy

When asked what he thinks is Spotlight's biggest selling point, O'Keeffe says, "Spotlight is easy to use. It's designed for the customer to be able to 'download and go.' Time-to-first-value is something we try to measure ourselves on internally. And we think if you can't get value from this thing within 20 minutes, then it's a fail on our part." He says that in a customer meeting for a proof of concept "in five minutes after the first data collection, Spotlight tells them about all the failed jobs that they didn't even know were failing."

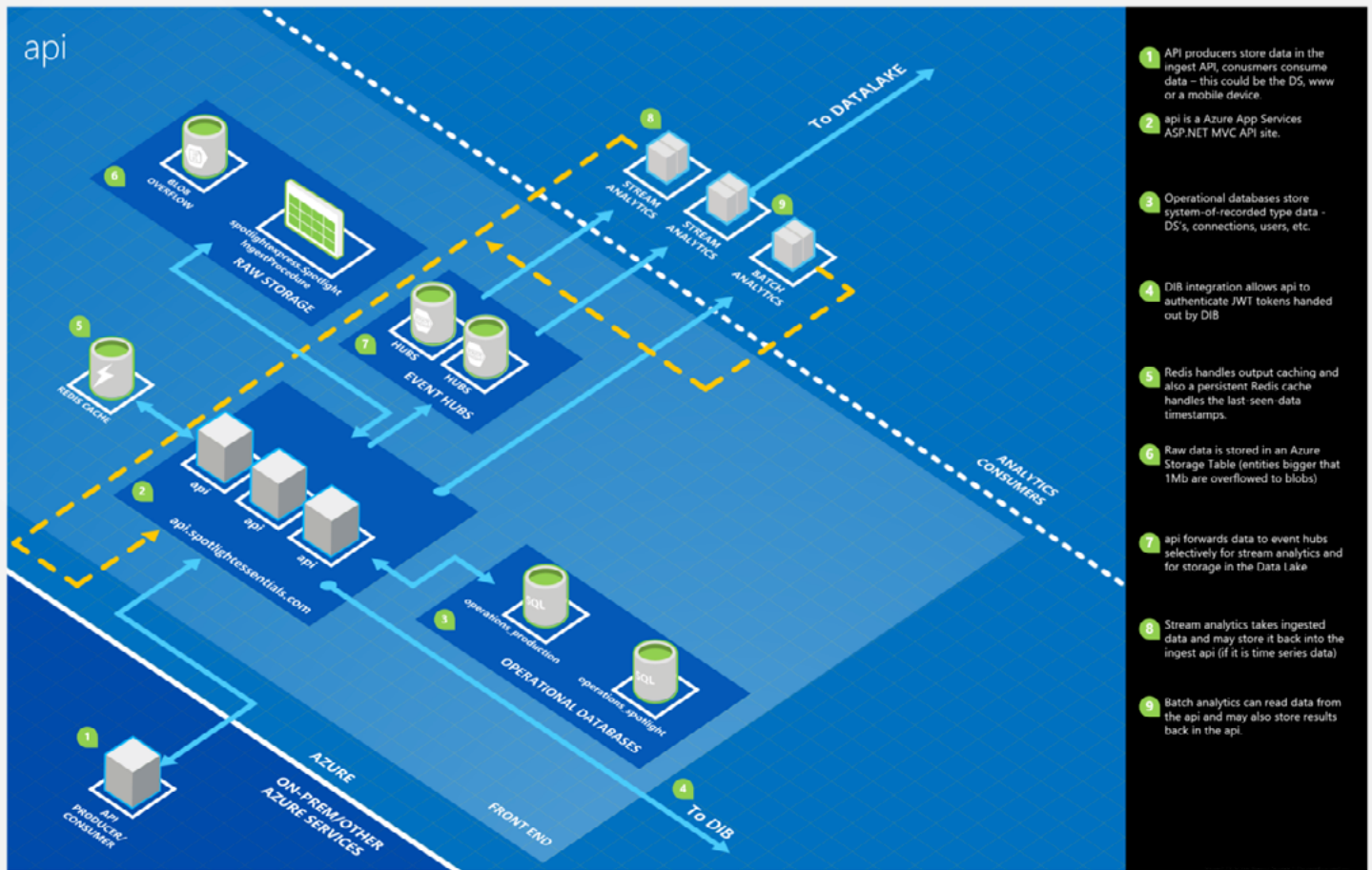
When asked why he likes building in Azure, O'Keeffe says, "For us it's just time-to-market. Because the dev teams are familiar with SQL Server as

a technology, adopting something like In-Memory OLTP is really, really fast. It writes to the same programming model, and it has the same schema model. The alternatives would be to cobble something together out of open-source technology, or to come up with some sort of homegrown thing—each of which would add to our time and opportunity costs."

In the future, O'Keeffe says machine learning will play a big role. "Right now, the monitoring tool is telling us all the symptoms, but not really telling us what the disease is. So we're trying to do that with machine learning, with the next goal being automated resolution."

The other major benefit is that Azure has always had a platform focus. "With Azure, you don't have to worry about installing an infrastructure virtual machine or about backing it up to ensure data integrity or about setting up three-way replication so you get high availability," says O'Keeffe. "This peace of mind is one of the largest benefits from working with the Azure platform and SQL Server."





Products

- Microsoft Azure
 - Azure SQL Database
 - In-Memory OLTP
 - Key Vault
 - App Service
- Microsoft SQL Server 2016