Large hospital system ensures healthy database environment using Foglight® by Quest® for SQL Server

Quest®

CUSTOMER PROFILE

Company	Integrated healthcare network
Industry	Healthcare
Country	United States
Employees	36,278

"We've found Foglight to be invaluable when it comes to monitoring databases and giving us a heads up before things happen."

Lead Database Administrator at a large integrated healthcare network

CHALLENGES

Patient data and diagnostic results. Clinical applications. On-call nursing systems. Pharmacy information. Home healthcare portals. In any healthcare setting, server uptime and performance are critical. Nurses rely on optimized systems to ensure timely and reliable patient monitoring. Primary care doctors and specialists need to be able to collaborate across departments, access test results and keep patient charts up to date. If SQL Server experiences an outage or even a slowdown in performance, patient care can be greatly affected.

Things can get pretty complicated in large healthcare networks where multiple hospitals and clinics share database servers across an enormous infrastructure. As one large healthcare organization grew its network, acquiring several smaller hospitals and merging with another good-sized healthcare entity, the IT team went from overseeing about 100 database servers to 250 database servers. They realized their hodgepodge method of monitoring databases was no longer going to work.

"I really needed a single pane of glass," said the lead database administrator (DBA). "I didn't want to have to log into one solution and then another and then this other one to try and build a picture of my environment."

The company needed a solution that could monitor everything.

HIGHLIGHTED SOLUTION:

Foglight for SQL Server

SOLUTION

After running proofs of concept on several different database monitoring solutions, the organization turned to Foglight® by Quest® for SQL Server to help keep its SQL server databases up and running smoothly across all 17 hospitals and more than 500 ambulatory care centers, fitness and wellness centers, home health services, rehab centers, and skilled nursing centers in their integrated network. They ultimately chose Foglight for SQL Server because of its ability to handle multiple domains using the same console, and the solution offered the most granular and most accurate monitoring features.

Foglight allows the IT team to quickly diagnose and resolve SQL Server performance problems and optimize workloads across the healthcare organization to prevent future issues. Proactive tuning of their SQL databases ensures greater uptime and better performance overall.

"We've found Foglight to be invaluable when it comes to monitoring databases and giving us a heads up before things happen," said the lead DBA.

RESULTS

Single console. Being able to monitor all databases using one solution has been a tremendous boon to the IT team. This complex organization works with many outside vendors to help configure and maintain applications and other aspects of its IT infrastructure. Often a vendor will make an adjustment to one aspect of the system without realizing how it might affect the rest of the environment.

For example, if a vendor sees a database file that's over 200 GB, they might assume that it's wasting space and turn on the Auto Shrink option. While it may sound like a good idea at first, says the lead DBA, "Auto Shrink has been documented to be one of the worst things you can do on a database because it causes unnecessary I/O and fragments the entire database."

Before the IT team had broad visibility into the activity on all databases, this type of issue could go undetected and cause slow performance across a range of systems and applications. At one point, the IT team was setting up a database in one of the organization's newly acquired hospitals. The time clocks in this hospital were very slow. Nurses usually had to plan for five minutes at the end of their shift to clock out because they knew it would take a long time for the card to be read.

"During the database setup, I turned off Auto Shrink on their 500GB database, and they thought the clock was broken because it began working so fast," says the DBA. "I actually got a ticket saying their clocks were too fast!"

Foglight for SQL Server allows the DBA and his team to configure custom alerts for specific activities such as when a database is put on Auto Shrink. For this healthcare organization, it's been a great way to monitor all the changes made by vendors during their maintenance routines.

Granular control. Using the SQL Performance Investigator within Foglight, IT admins can view the change history within the database environment and troubleshoot issues as soon as they arise. For example, if an overnight Windows update causes a connectivity error, Foglight sends the IT team an immediate alert that they need to restart certain background servers.

Admins can use the SQL Performance Investigator to troubleshoot workload slowdowns and other issues by looking at top-level SQL Server concerns and then drilling deeper into the data. For example, if you notice that your database is using 80 percent of your memory, you might flag that as the problem for a slowdown. The SQL Performance Investigator allows you to delve more deeply into the issue to see if the slowing occurs at a particular time of day and whether any specific activity is happening at that time. For example, the IT team discovered that one team within the healthcare organization runs a large report every day at the same time, which puts a temporary drag on the system.

The team can also organize their IT services and applications into groups and monitor them accordingly. That way, the most mission-critical apps that cannot afford to have data loss or downtime will have faster response requirements.

HIPAA compliance. To meet Health Insurance Portability and Accountability Act (HIPAA) standards and ensure ongoing security across the infrastructure, the healthcare network needs to reset sysadmin passwords on a regular basis. Various clinicians and organization employees may use the sysadmin password to access applications and other resources. So rather than disable the password across the board and potentially lock people out of applications while they are in use, the IT team can use Foglight to identify whether any users are currently logged in with the sysadmin password. If the password hasn't been used in six months, then it can easily be changed. Otherwise, the team first notifies the users that it will be reset on a certain date.

Custom dashboards. The lead DBA for this organization created a custom view that's delivered to his team every morning, called Morning Coffee. This dashboard includes failed job alarms, instance-down alarms and other critical red flags that alert the team to current and potential problems. "I really like making my own dashboards. If there is something wrong on the Morning Coffee dashboard, my team knows to address it immediately."

He also created a VM dashboard, so he can correlate his operating system, SQL Server and VMWare metrics in one place. This helps him better understand where the slownesses are across his infrastructure. "When you have a layered environment like we do, you need to be able to see into everything to truly gain insights. Otherwise you're going to be wracking your brains trying to figure out why SQL Server is slow, when in reality it can be linked to a change in your VMWare environment."

Scalability. Foglight has allowed this healthcare organization to scale as needed with no concerns about performance monitoring. The organization now monitors 520 databases, including 473 SQL Server instances, one MySQL, three PostgreSQL and 43 SQL BI. This fleet currently includes six domains, and they have plans to add a seventh. They have six agent managers running — two combined in one domain and all the rest have their own domain.

Reporting. Foglight enables the IT team to review workload reports to understand where problems stem from. DBAs can run consistency checks, review backup schedules and other details. Foglight comes with several useful out-of-the-box reports that the lead DBA sends to key stakeholders. Custom reports allow the team to look at the system on a more granular, technical level.

Training and support. Between the Quest Professional Services team, free online training videos and the hosted community of experts, database administrators have plenty of resources for learning how to customize and optimize Foglight for SQL Server. Professional Services walked the healthcare organization's IT team through the initial installation, then provided a week of in-person training and pre-architecture meetings.

BENEFITS

- Clear visibility into critical database performance across multiple platforms and domains
- Built-in intelligence, offering database health and activity at a glance
- Simplified SQL Server performance tuning
- Granular control over alerts, system analysis and reporting

ABOUT QUEST

Quest creates software solutions that make the benefits of new technology real in an increasingly complex IT landscape. From database and systems management, to Active Directory and Office 365 management, and cyber security resilience, Quest helps customers solve their next IT challenge now. Quest Software. Where next meets now.

> "It's easy to use. Foglight allows you to see just about any metric you ever could think of in SQL Server. The reporting is amazing. The alerting is fantastic."
>
> *Lead Database Administrator at a large integrated healthcare network*

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