



Case Study

When A Busy Database Can't Keep Up

Most enterprises rely heavily on their database architecture to keep workflows seamless and efficient. Performance issues create problems that are both frustrating and costly.

When Fortified started working with Fresenius Medical Care, they were encountering extremely slow turn-around times for their billing systems. By properly diagnosing the problem and understanding every solution option, Fortified was able to help Fresenius get their daily business back on track.

// *When billing slows down, so does revenue. Fresenius was losing millions in revenue because their systems couldn't keep up with demand.* //

The Challenge

Fresenius Medical Care is the world's largest provider of dialysis products and services. The management of the daily accounts payable and receivable workload put an enormous demand on their data ecosystem. As a medical provider, they needed to count upon a billing system that smoothly generated invoices for insurers and booked revenues.

When the billing slowed down, the revenue decreased. And Fresenius had millions when their systems couldn't keep up with demand. Their OLTP workload was only 105,000 per second. The database simply couldn't keep up with the application's daily workload.

Solution

Fortified Data first had to understand how the server was operating to determine why it was slow. This led them to consider three questions:

- What should we improve?
- Which hardware would work best?
- What would be the difference-making implications between size and cost?

Fresenius's entire system needed to speed up in order to handle the daily demand. They began by thoroughly investigating, comparing, and understanding the processor architecture. They replaced the server hardware, which decreased CPU and only marginally increased the speed (5%). But understanding the hardware and the generation of the processors made a huge difference. After the processors were changed, their bus and memory speeds were much faster. They also saw a better balance between NUMA Nodes, and improved the PCIe offerings. Typically, enterprises simply select a bigger piece of hardware, (often at the suggestion of the vendor), but a well-informed diagnosis led to the solution of using a smaller piece of hardware, instead.

Outcome

There was a significant increase in the transactions per second, written transactions per second, % CPU utilization, key business function calls per second, key business function duration per call, and peak business transaction class per hour. As a result, Fresenius was able to get their pay periods back on track and they also eliminated the lag in bill payments, which solved for their revenue disruption issues.