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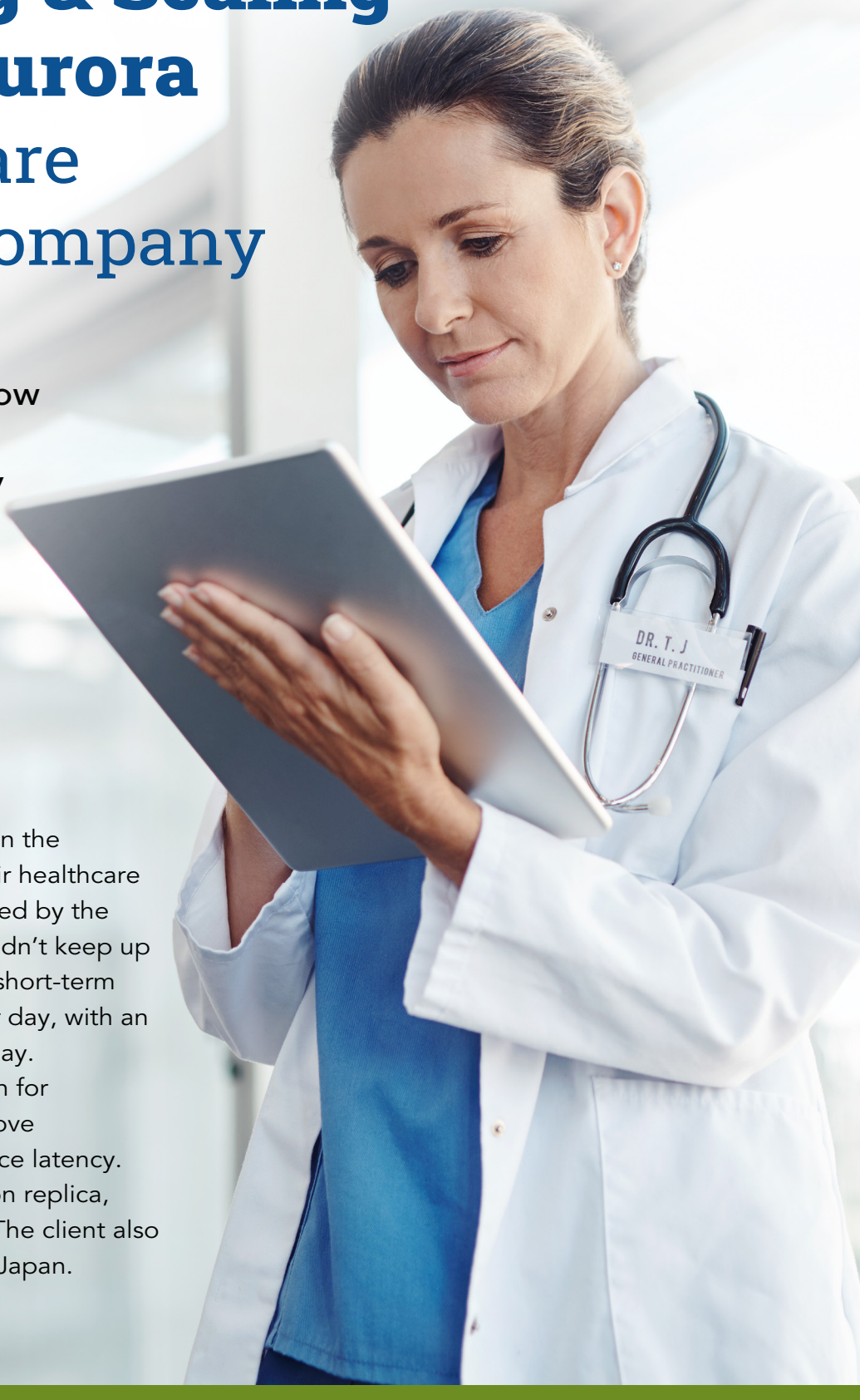
Case Study

Optimizing & Scaling Amazon Aurora for Healthcare Analytics Company



This case study details how Datavail improved the headroom and scalability of an Amazon Aurora instance for a healthcare analytics company.

The Challenge

Our client needed improvements in the performance and scalability of their healthcare analytics software. They were limited by the on-premise infrastructure that couldn't keep up with its increase in daily cases. Its short-term goal was handling 1,000 cases per day, with an eventual goal of 2,000 cases per day.
The company needed an approach for replicated copies that would improve application performance and reduce latency. Aurora only allows one cross-region replica, which was configured for the EU. The client also needed a read replica for UK and Japan.

The Solution

Datavail worked on three projects to meet the client's Aurora performance requirements.

Performance and scalability assessment:

We determined the quick-hit changes to reduce CPU utilization and create headroom. The client was already running on the largest Aurora instance available and hit 80 percent CPU with these heavy analytics workloads. Our headroom goal for this phase of the project covered the next three to six months. Slow running queries were identified and addressed to create continued improvements over this period.

Longer-term architecture selection:

We made architecture decisions based on the scalability and high availability needed to support 1,000 and 2,000 cases per day. The client required multiple read replicas across different regions for the best end-user experience. Encryption and security were put in place to ensure a secure environment. We also made AWS and database platform recommendations with a focus on optimizing costs for our client.

Cross-region read replica implementation:

Once the longer-term architecture was put into place, we set up the read replicates for regions that were experiencing problems with accessing the software without latency.

The Results

Datavail right sized the client's database to the Amazon Aurora instance class that was appropriate for the application's processing and memory requirements.

They saw a 20 to 30 percent improvement in performance compared to their on premise environment.

They instantly replicated data across geographic regions such as the United Kingdom and Japan. Amazon Aurora gave them built-in high availability and disaster recovery functionality.

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