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CASE STUDY

Utilitywise Increases Performance of IoT Application Using Redis^e Pack

Executive Summary

By deploying the Redis^e Pack database solution, Utilitywise was able to reduce application down-time for its IoT application by 50—70% with 300% higher performance.

Driving Energy Efficiency

Utilitywise is a utilities broker and energy services company that bridges suppliers and consumers of power. As one of the UK's leading independent consultancies, Utilitywise is now helping over 30,000 clients become more energy efficient. By streamlining all procurement processes and the delivery of energy services, Utiltywise's customers can spend less time worrying about their utility spend and focus on running their companies.

The Need for a Higher Performance RDBMS

Jonathan Wilkinson is the IT Innovations Director at Utilitywise. He heads up a division that develops and delivers energy management-related building controls, including a very successful Internet of Things (IoT)-based application that offers intelligent energy management to buildings based on real-time conditions.

The Utilitywise IoT application streams live data from buildings, enabling users to control their business energy assets from their phones. The application operates physical devices in buildings including lighting, heating, and ventilation systems.

The Utilitywise IoT application requires extremely fast data ingest as well as rapid processing of data for analytics. The application uses a Microsoft SQL Server and Datastax Cassandra backend, but needed a higher performance database technology to enable it to easily scale.

The Redis Solution

Utilitywise chose the Redis^e Pack solution from Redis Labs for its real-time data ingest, content caching, and analytics applications. Redis^e Pack extends open source Redis and delivers operational benefits of stable, high performance, zero-downtime linear scaling and hassle-free true high avail-ability with substantially lower operational costs.

UTILITY WISE

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Jonathan Wilkinson,

Innovations Director

UTILITY WISE

Utilitywise's Requirements

Needed a high performance database solution to enable easy scalability for new Internet of Things (IoT) application.

Results with Redis[e] Pack

The Redis[e] Pack solution is enabling Utilitywise to create a high performance caching layer for the IoT application. It also helped them process streaming data from SignalR on MS Azure with the extremely low latencies they needed. "Redis Labs enabled us to stream our IoT data, live from customer buildings to their smartphones with minimal latency," noted Wilkinson. "By moving to Redis[e] Pack, we were able to cut the latencies on our IoT application from seconds to milliseconds."

Since the IoT application processes mainly time-series data, Utilitywise also uses Apache Spark to analyze and spot patterns in the data which is stored in Cassandra. Redis[e] Pack allows them to respond instantaneously to actions detected, so that power consumption can be controlled and managed in real time for energy savings. Other technologies used in the stack include Microsoft Azure, Apache Spark, Signal R, Cassandra, and Microsoft SQLServer.

By moving to Redis[e] Pack, Utilitywise was able to reduce application downtime by 50-70%, with 300% higher performance for its IoT application. "Redis[e] Pack offers built-in high availability with persistence, replication across zones, and instant automatic failover," Wilkinson explained. "It also provides an easy way to cluster and scale the Redis layer. Shards and nodes are added seamlessly, allowing our application to scale up and down gracefully. The Redis Labs solution also handles rapidly moving data efficiently, reducing the load on our Microsoft SQL servers."

Redis[e] Pack Benefits

- Reduced application downtime by up to 70%
- Obtained 300% higher and more stable performance
- Substantially reduced application latencies by 1,000x

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