Choosing the right database for IoT architectures

Optimize business outcomes with IBM Informix for IoT and embedded devices

Highlights

- Enable speed-of-thought analysis of real-time data
- Choose from a comprehensive set of high-availability options, schedule upgrades without downtime and scale capacity on demand
- Automatically run analytics or aggregation functions on new data, so you always have the latest information on hand

As the Internet of Things (IoT) grows, IoT architectures increasingly require data processing, analytics and storage at the network edge. Embedding database software on edge devices can perform these kinds of critical data management capabilities, allowing important determinations to occur close to the data source. This speeds up responses and actions ranging from triggering cooling fans to identifying dropped calls. The database can also enhance security, support data availability and accelerate performance in embedded environments.

But not every database is up to the task. Choosing the *right* database is critical.

Challenges to success

The database is a crucial factor in a successful IoT implementation and other embedded device scenarios. It must be able to overcome the challenges posed by fast-moving sensor and device data, including:

- **Data volume and variety:** Organizations often collect many different types of IoT data that must be managed together.
- **Scalability:** There may be thousands of devices in a given environment, each running an instance of the database.
- **Time series data:** Sensor data is captured at specific locations at specific time intervals. Time series and spatial functionalities are required to quickly and cost-effectively store, manipulate and access this data.
- **High performance:** IoT applications often include a real-time or near–real-time element—such as detecting fraudulent transactions—that requires high-performance database software.

The solution: IBM Informix

Reliability, flexibility, ease of use and low total cost of ownership make IBM® Informix® a best-in-class enterprise database, one with a clear record of supporting all kinds of embedded applications. Informix is uniquely suited to the demands of IoT developers and practitioners.

- **Integrates multiple data types:** Informix offers a hybrid database system with the distinctive ability to seamlessly integrate data types, including SQL data and NoSQL/JSON data. This allows developers to place JSON and relational tables in the same storage engine.
- **Enables continuous availability and scalability:** Organizations can choose from a comprehensive set of high-availability options, schedule upgrades without downtime and scale capacity on demand. Informix provides horizontal scaling and sharding for any configuration and environment.
- **Offers time series and geospatial support:** Informix uses the Time Series Native data type, which requires less storage space and helps queries run exponentially faster. A purpose-built streaming data loader for sensor data can automatically run analytics or aggregation functions on new data, so you always have the latest information on hand.
- **Delivers real-time performance:** Automated, continuous updates of changed data enable speed-of-thought analysis.

Why IBM?

At the device level, database footprint is a major consideration. The solution must comfortably fit in small devices and maintain performance without ongoing database tuning, which is impractical in IoT environments.

Informix features a small footprint and self-managing, self-tuning capabilities that make it ideal as an embedded data management solution. It can automatically sense and respond to workload changes without intervention. And it works with most popular chip sets, operating systems and cloud environments. That's why Informix is the *right* database for IoT and embedded devices.

For more information

Make the most of your IoT opportunities with Informix:

- Get a no-cost, 30-day trial of Informix at http://ibm.co/2jxWZGv
- Read the Bloor Research paper on Informix and IoT at http://ibm.co/2kxCx7T

Additionally, IBM Global Financing provides numerous payment options to help you acquire the technology you need to grow your business. We provide full lifecycle management of IT products and services, from acquisition to disposition. For more information, visit: **ibm.com**/financing

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