Understanding the unique requirements of the edge computing infrastructure is critical

As the Internet of Things (IoT) and edge computing continue to evolve, doors open for conducting business in new ways, especially when it comes to data management on the edge. Until recently, most data collected on the edge (at or near the collection point) was sent to the cloud or a data center for analysis and storage or discarded.

A new, third option has become available: Databases that operate on edge hardware. However, not just any database will do. It should be a database that is specifically built for use in the unique environment of the edge.

A database that is truly built for use on the edge will empower organizations with the ability to store and process their data at or near the collection point, setting the stage for mission-critical, and possibly, life-saving decisions to be made much faster and very reliably, without the need to rely solely on the cloud.There is no single database solution that fits all, rather each business should look to its unique case on the edge in order to determine the best choice. Having said that, there are a number of questions that should be asked when choosing a database for use on the edge:

- Can it guarantee data quality using transactional edge persistence (i.e., the data remains available after collection)?
- With what level of development efforts can it collect and store mission-critical data on the edge?
- Does it enable real-time IoT decision making? No, really, can it? Can it query live data fast enough to use that information to take action?
- How many major IoT operating systems and hardware platforms does it support? Can it run natively on the OS and hardware?
- Can it provide flexible/scalable data management: Portability, data partitioning, data coalescing and replication?
- Does it support popular communication interfaces and multiple integrations?
- What communication protocols are supported to securely transmit selected data, such as strong encryption?
- What security features does it provide for all data stored at the edge?
- Can it use both SQL and NoSQL microservices to collect, query and analyze data in real-time?
- What analytics tools can be integrated for use over actual real-time unstructured data?
- How big (or rather, small in this case) is the footprint? (Hint: The smaller, the better.)

One database that passes the test posed by this list of essential questions is the new c-treeEDGE IoT Database. This new solution by FairCom Corporation is a high-speed IoT database featuring unique technology that facilitates full-featured, high-performance data management while running on IoT and IIoT gateways and on the smallest edge devices. c-treeEDGE has a very small footprint at 37 megabytes, but it is powerful enough to host data from thousands of sensors.

c-treeEDGE IoT supports native MQTT communication, as well as Node-RED and REST API integration. It runs natively on multiple edge operating systems: Raspbian (Raspberry Pi), Windows IoT, Android, and AndroidThings. While also running on Windows 10 and Linux on x86 architecture for use in more powerful gateway systems, c-treeEDGE is ideal for use in manufacturing, healthcare, energy and transportation, as well as many other industries.

While c-treeEDGE is a new product, its core is powered by the same technology found in FairCom's flagship product, c-treeACE, a solution that allows organizations to enjoy the flexibility of NoSQL while taking advantage of SQL's tight transaction control. In fact, this database technology has been embedded in medical devices and manufacturing sensors for IoT activities for many years — long before the Internet of Things age arrived.

Regardless of the database you choose to run on the edge, it should be one that meets your needs and can easily adapt as those needs and technology change.

About FairCom

FairCom Corporation is a software industry pioneer and a global database technology leader. Its reputation of innovation began in 1979 and continues today with fast, reliable products that are trusted by organizations in a broad spectrum of industries, ranging from small and medium-sized businesses to enterprise-level organizations, including Fortune 100 members. The FairCom c-tree-based product line includes the customizable c-treeACE multimodel database, the c-treeRTG "Ready-to-Go" data management solutions for legacy systems, and c-treeEDGE IoT Database for data management on the edge. Additional information about FairCom is available at FairCom.com.

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