c-treeACE®

Rockwell Automation meets customer requirements without sacrificing performance with c-treeACE

Embedded database's speed and flexibility allows company to enhance its product offerings

With more than 20,000 employees, Rockwell Automation is the world's largest company dedicated to industrial automation and information. Its mission is to improve the quality of life by making the world more productive and sustainable by enabling the next generation of smart manufacturing.

Rockwell Automation produces a wide range of products, including the Studio 5000® Automation Engineering & Design Environment™. With this software solution suite, users can design, build and maintain their industrial automation systems. Among the benefits that customers enjoy are the ability to respond quickly to changing market and business needs. Another perk is that Studio 5000 enables its customers to reduce the total cost of ownership, including maintenance and training.

> " c-treeACE gave us all the capabilities we needed to meet our requirements without sacrificing performance. "

Derek Miller, Rockwell Automation Software Project Engineer

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One of the major components that allows Studio 5000 to work so well is the c-treeACE database management system, which is embedded into Studio 5000's main file format.

As part of its architectural strategy for the product, Rockwell decided to use the embedded model of c-treeACE. Lightweight and fast, c-treeACE operates seamlessly within applications, in a way that end users and customers don't have to worry about managing internal data access. Typical use cases are data dictionaries, metadata and embedded devices, which usually require high throughput with resilience, and minimum human intervention for data administration.

In line with the approach of high performance and high throughput, the embedded model of c-treeACE is a perfect fit for applications like Studio 5000. Designed with developers in mind, FairCom provides a full SDK, low-level APIs and library integrations. In Studio 5000, c-treeACE is configured into tables that contain all of the customer content. Since data/content is such an integral of part of an organization's operations, c-treeACE is tightly integrated into Studio 5000's persistence layer (the location in which the information is stored.)

c-treeACE has been powering data management in Studio 5000 for more than 20 years. Rockwell Automation selected c-treeACE because it was the only database solution that provided the high levels of performance, integration and low-level database control required by Studio 5000.

According to Rockwell Automation Software Project Engineer Derek Miller, c-treeACE has always supported the company and its customers in the areas of performance, integration and low-level database control. "There have been several instances where we've needed very fine-grained control over exactly how data is stored in the database (and ultimately our project files)." Miller said. "c-treeACE gave us all the capabilities we needed to meet our requirements without sacrificing performance."

c-treeACE: Fast and Flexible

c-treeACE is known for its speed, and it is one of the benefits that Rockwell Automation's engineers and developers have lauded. Since c-treeACE has been designed from the ground up, it inherently provides the fastest possible database operations, regardless if it is being used as a stand-alone database or embedded into a mission-critical solution like Studio 5000.

Using a fast database is good, but it becomes even better when that database is flexible. With Rockwell Automation serving the ever-changing manufacturing industry, the Studio 5000 solution has had to evolve in order to continue providing the high performing, reliable automation solution their customers need. c-treeACE's flexibility has allowed Rockwell Automation to do just that.

"One major advantage of c-treeACE's speed is that it has allowed us to develop features that are very data intensive with only a minimum amount of caching, in particularly performance-sensitive areas," said Miller. "We have mostly leveraged the performance and customizability of c-treeACE in our product, but its lightweight and straight-forward interface have also been beneficial."

Among the reasons for this adaptability is that c-treeACE is highly configurable, with more than 500 parameters that allow for tight calibration, enabling system administrators to maintain strict security and the delicate balance of performance versus reliability that is so unique from business to business. The combination of the NoSQL interfaces - for

schema-less data sets, like the ones produced by PLCs and automation controllers, and SQL - for integration with analytics, business intelligence and other applications that require structured, relational models - gives software developers the power and control that they need from an embedded database solution like c-treeACE.

The end result is that the speed and flexibility of c-treeACE has played a key role in Rockwell Automation producing Studio 5000, one of the most reliable automation solutions on the market today.

About Rockwell Automation

Rockwell Automation Inc. (NYSE: ROK), the world's largest company dedicated to industrial automation and information, makes its customers more productive and the world more sustainable. Headquartered in Milwaukee, Wis., Rockwell Automation employs approximately 22,000 people serving customers in more than 80 countries.

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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 the new c-treeEDGE IoT Database for computing on the edge. Additional information about FairCom is available at FairCom.com.

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