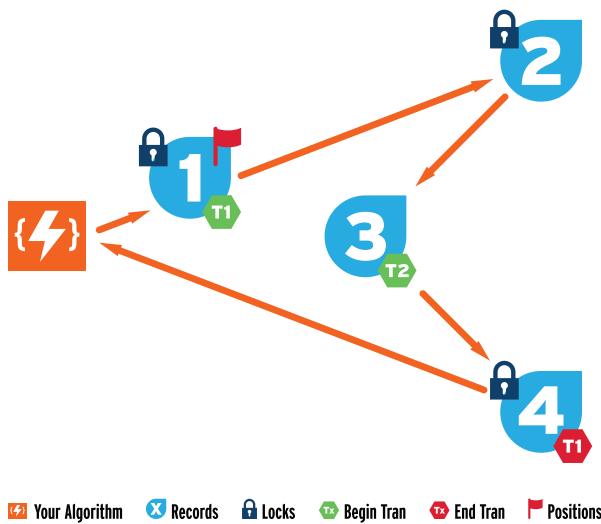


# c-treeEDGE

IoT DATABASE

## FairCom's high-performance NAV API frees developers to do so much more on the edge

No other solution achieves the speeds of NAV; it gives your application complete control over every aspect of data processing



Data management on the edge and in IoT and IIoT environments can present unique challenges, but at the same time, it opens the door for businesses to enhance their operational capabilities. Among the challenges facing edge developers are data integration, collection, aggregation and synchronization on the edge.

In order to overcome these challenges and to take business operations to new levels, a high-performance edge-computing database is needed, such as FairCom's c-treeEDGE IoT Database: A data management solution that is built specifically for edge-computing environments. It provides automatic data integration, collection, aggregation, and synchronization. This frees developers to add business value instead of doing low-level data plumbing.

With the right edge database in place, there are many benefits to be had. Among them are the ability to have mission-critical, real-time decision making capabilities at or near the collection point with lower developer costs and faster time to market.

### c-treeEDGE NAV API Benefits

- NAV is the fastest way to build the fastest running edge applications
  - + No other solution can achieve the data processing speeds of NAV because it gives your application complete control over every aspect of data processing: record traversal, index traversal, locks, transactions, jumping directly to previously saved record and index positions
- NAV is the most efficient way to process data
  - + Efficiency is critical for databases embedded in devices
  - + NAV allows the database footprint to shrink to micro sizes
  - + NAV enables your application to achieve maximum speed on low-end CPUs
  - + NAV ensures consistent, predictable, repeatable, high performance
  - + NAV and SQL work simultaneously on the same data
  - + Use NAV for the most performance-critical work and use SQL for easy data queries
- The object-oriented NAV API is easy for developers to use because it processes records through simple find, next and previous navigation commands

## **"NAV"igating the edge with FairCom's NAV API**

FairCom data management products are legendary for their reliability, speed and flexibility – attributes that are a must-have for real-time data management on the edge. FairCom's products provide organizations with high speed and flexibility because of the low-level control it gives to developers. A key factor that makes FairCom technology ideal for database operations on the edge is the NAV API. This powerful tool is an object-oriented, record-navigation API based on the relational database model.

The NAV API is a proven technology that has allowed FairCom's data management products to be integral components in numerous mission-critical edge-computing and embedded database activities for many years, long before the edge and IoT became buzz words. For example, FairCom's flagship product, the c-treeACE unified multimodel database, has vital roles in medical devices, manufacturing systems, real-time stock analytics, high-speed telecommunications and other mission-critical systems. Among the organizations that trust FairCom technology for its database needs are Verizon, UPS, Software AG, the U.S. Federal Aviation Administration, Rockwell Automation and Thomson Reuters.

The NAV API provides developers with a much greater degree of control than other databases. Developers can control almost every aspect of the database, allowing them to do only what is needed and nothing more to ensure reliability, speed and efficiency – three things that are critical in making real-time decisions on the edge.

### **Full-speed ahead with NAV**

The NAV API empowers C, C++, Java, .NET, and Node.JS developers to process data at extreme speeds with high efficiency. NAV allows a developer to control every detail of finding, navigating, locking and transacting records. This control enables applications to achieve new levels of speed and efficiency that cannot be achieved otherwise. And unlike SQL, the NAV API gets easier to use as problems become more complex. This is because the NAV API runs natively in modern programming languages, which have objects, functions and modules for managing complexity, whereas SQL does not. Lastly, SQL stored procedures have a few features to manage complexity, but they have a fraction of the capabilities and speed of the NAV API.

Speaking of SQL, it is not as fast and efficient as the NAV API, but for simple queries it requires less code and is very familiar to developers. c-treeEDGE provides a time-tested and fast ANSI SQL query engine with standard ODBC and JDBC connectors that integrate with a vast array of industry tools. With c-treeEDGE, developers do not have to choose between SQL and NoSQL because they can use SQL and NAV simultaneously on the exact same data.

In addition to the freedom the NAV API provides developers, the FairCom Database Engine has all the major features found in other enterprise databases, such as ACID transactions, high availability, multi-threaded parallel processing, encryption, conditional indexes, triggers, partitioned tables, etc. It also has features found in NoSQL databases, such as JSON, relaxed transaction processing, eventually consistent data, eventually consistent indexes, etc. The NAV API gives the developer full control over all aspects of consistency to achieve the desired performance, behavior and data integrity.

Furthermore, c-treeEDGE is extremely portable and supports all major operating systems and hardware configurations from ARM to Intel. Whether it's a small Raspberry Pi or larger single-board computer, an Android or IOS phone, a powerful edge gateway or a 100-plus core Linux or Windows server—c-treeEDGE covers them all. The result is a full featured, high-performance database optimized for edge computing, hardware devices, and embedded systems that also runs very well on high-end servers. With c-treeEDGE, developers can enjoy the simplicity of a database that can automatically, reliably and simultaneously replicate any desired data between any number of small devices, gateway computers, and high-end servers.

So, the question for developers is, "Why limit your capabilities on the edge, when c-treeEDGE frees you to do so much more with less work?"

**More detailed information about FairCom's NAV API is found at  
[FairCom.com/resources/whitepaper/ctreeace-nav-api](http://FairCom.com/resources/whitepaper/ctreeace-nav-api).**

**Details about the c-treeEDGE IoT Database are available at [FairCom.com/products/ctreeedge](http://FairCom.com/products/ctreeedge).**

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