Couchbase

AEDES

About AEDES

AEDES, the European Agency for Development and Health, is a private consulting company specializing in public health. AEDES mission is to help improve the quality and access to healthcare around the world. For this purpose, AEDES promotes the sharing and transfer of knowledge by providing experimented human resources and performing consulting and management services in the areas of health. AEDES operates in developing and intermediate countries, promoting sustainable economic, social, and environmental development.

Enabling digital healthcare without reliable power or internet

AEDES revolutionizes healthcare systems in sub-Saharan Africa with Couchbase

Parts of the developing world struggle to realize the benefits of modern, digital healthcare technology due to a lack of reliable power, poor internet connectivity, and the sheer costs of going digital. The public health consulting organization AEDES is attempting to address these challenges through the development of CERHIS—a tactile hospital information system that brings digital services to small and medium-sized hospitals in sub-Saharan Africa.

The Challenge: Go paperless in a difficult environment for digital transformation

To support CERHIS and enable healthcare organizations to transition to digital processes, AEDES needed a robust data platform. That platform had to work even in locations where there is poor cellular and wireless connectivity. "People immediately understand how medical supplies and equipment make a difference in healthcare, but some of them don't understand the role of data," says Loïc Vaes, CERHIS project manager. "But better data makes for better patient care, better hospital management, better healthcare services, and better national health policies."

The Solution: Implementing an Android-powered medical record system with Couchbase

For CERHIS, AEDES chose Android-based Samsung tablets, which are rugged, easy to use, and cost effective. A locked metal storage unit connected to solar batteries stores the tablets and covers the charging and security needs of each hospital.

The Couchbase data platform powers the Android app used to collect administrative and medical data. With Couchbase, all of a patient's information is stored in one place. Each item—such as patient information or exam results—exists as a single document, something that is possible only in a schema-less database model.

Couchbase Server, which runs on Ubuntu, collects information in four buckets: users, data, metadata, and stats. A local database on each tablet device is powered by Couchbase Lite. The local database replicates the first three buckets (users, data, and metadata) so users can access services offline.

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The Benefits: Achieving a digital revolution in healthcare services against all odds

Minimizing cost, maximizing flexibility

AEDES controls costs by pairing Couchbase with commodity hardware. For a reasonable cost, each hospital can receive the CERHIS software, Android tablets, a basic x86 server, batteries, charging docks, and training on the system.

Couchbase also helps reduce costs for AEDES while enhancing flexibility. Because Couchbase is open source, AEDES can customize the platform to meet its specific needs— even with a tiny programming team of just two people.

Gaining offline functionality

The intranet was used in a previous iteration of this project, but when connectivity was lost, and tablets could not sync, users reverted to paper records. AEDES chose Couchbase over competing solutions for its ability to sync with Android tablets offline. "CERHIS simply would not have been possible without Couchbase," says Vaes. "We tried other solutions, but without Couchbase's offline functionality, a feature which might be little more than a bonus in some projects, ours would not have been possible."

Streamlining training, simplifying management

Because the data changes significantly from year to year and from country to country, AEDES needed the flexibility of a schema-less, document-oriented database model. The team immediately opted for NoSQL.

NoSQL made training technicians easy. "At the start of the project, we allocated a few days of workshops for teaching the local technicians how to use NoSQL, a type of database they didn't know," says Vaes. "It has been very intuitive for them to transition from SQL in order to work on configuration and data querying."

Couchbase also simplifies management. "It's like magic happening behind the scenes. It is simple to install on the servers, and once we boot them, we can more or less leave the database alone," says Vaes. "The Couchbase installation works even better than expected."

Learn more

Visit couchbase.com to learn more about the enterprise-class NoSQL database built for business-critical applications.

About Couchbase

Couchbase's mission is to be the database platform that enables a revolution in application innovation. To make this possible, Couchbase created an enterprise-class NoSQL database to help deliver ever-richer and ever more personalized customer and employee experiences. Built with the most powerful NoSQL technology, Couchbase was architected on top of an open source foundation for the massively interactive enterprise. Our geo-distributed database provides unmatched developer agility and manageability, as well as unparalleled performance at any scale, from any cloud to the edge.

Couchbase has become pervasive in our everyday lives; our customers include industry leaders Amadeus, AT&T, BD (Becton, Dickinson and Company), Carrefour, Cisco, Comcast, Disney, DreamWorks Animation, eBay, Marriott, Neiman Marcus, Tesco, Tommy Hilfiger, United, Verizon, Wells Fargo, as well as hundreds of other household names. For more information, visit www.couchbase.com.