

REPORT REPRINT

NewSQL database firm NuoDB bulks up staff after landing \$17m funding round

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Founded in 2010, the company has raised \$54.7m in six venture rounds, with the most recent being a \$17m infusion completed in February. NuoDB has grown its headcount to about 70 employees worldwide, up from approximately 50 one year ago.

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With its distributed database that can run on-premises, in the cloud or in virtual or containerized environments, NuoDB believes it can solve the common challenge of being able to scale horizontally while also maintaining data consistency and supporting SQL. The company offers a distributed database that can run in private or public clouds, as well as virtual or containerized environments such as Docker. It doesn't provide a full database as a service (DBaaS), but reports that it might in the future.

THE 451 TAKE

NuoDB has added about 20 employees since we last caught up with it at the end of 2014. So it's clearly seeing some growth, even if it remains a little shy about divulging exact paying customer numbers. Technology-wise, the company can claim to do what few else have managed: scale out horizontally on NoSQL underpinnings, yet still offer SQL support and ACID compliance so that it can be used for transactional workloads. Offering both transactions and analytics might no longer be the differentiator that it once was, but with its standards support and the ability to scale horizontally, NuoDB still makes for an appealing proposition.

CONTEXT

NuoDB was founded in 2010 by renowned database architect Jim Starkey and accomplished software CEO Barry Morris. Starkey previously developed InterBase, the first relational database to support multi-versioning, the blob column type, type event alerts, arrays and triggers. He's also the founder of several companies, including web application development and database tool vendor NetInfrastructure. Morris' former roles include CEO of IONA Technologies and chairman and CEO of StreamBase Systems, which was acquired by TIBCO in June 2013.

Based in Cambridge, Massachusetts, NuoDB has raised a total of \$54.7m in six rounds of funding from five investors. The most recent round was a \$17m series B landed in February from Hummer Winblad Venture Partners, Longworth Venture Partners and Morgenthaler Ventures. The round was led by Dassault Systèmes, a longtime NuoDB investor and customer.

In a recent briefing, the company reported that it now has just over 70 employees, which is up from about 50 at the end of 2014. Most staff are in its headquarters in Cambridge, Massachusetts, but it also has a European Development Center in Dublin.

NuoDB has two main customer types: startups and other firms that license its Community Edition, and larger enterprises. It says it has several hundred of the former, and dozens of the latter – it won't be more specific than that.

The company has made two significant staff additions since its last funding infusion. In April, Paul DiLaura, MD for North America at Dassault, was appointed to NuoDB's board of directors. Then in June, NuoDB announced the hiring of Ariff Kassam as VP of products. Kassam is a technical patent-holder for a distributed database design himself; he joined NuoDB from Teradata, where he was VP of the Unified Data Platform. Before that, he was cofounder and CTO of database virtualization provider xkoto.

TECHNOLOGY

The key to NuoDB's ability to scale out horizontally – something that is tricky and expensive to do with traditional relational databases – is that it has separated the transaction engine from the underlying storage manager, which is essentially a key value store. To achieve the requisite performance, it makes considerable use of memory on each node that it is running. However, it's not a pure in-memory database: data is persisted back to disk when it's not being processed or called into memory for analytics.

What's different about NuoDB compared with some NoSQL databases – which can also scale out across a cluster – is that it offers support for standard SQL (with some additional proprietary extensions). It even goes so far as supporting SQL joins. Developers aren't limited to SQL, though: they can access the database via ODBC or JDBC, and there's also a RESTful API interface.

Critically, NuoDB maintains ACID compliance, even when being scaled across a cluster. ACID, which stands for atomicity, consistency, isolation and durability, is a key requisite of transactional systems that can't afford any data loss. Because it's ACID-compliant, the company can claim that its database can handle transactional workloads, and with the use of in-memory techniques also handle analytics. NuoDB notes that it sees its usage primarily as a distributed, transactional database, with occasional ad hoc analytics thrown in for good measure.

The database offers a GUI-based operational management interface, but in containerized environments such as Docker, the company reports that customers are increasingly using the likes of Swarm, Kubernetes and Mesos – the open source platforms for automating deployment, scaling and operations of application containers across clusters.

CUSTOMERS

NuoDB claims that its database technology is used by thousands of developers worldwide. Reference customers include automotive aftermarket giant AutoZone, NorthPoint Solutions and, as noted, Dassault Systèmes. The company says most of its clients tend to be in the financial services or telecom verticals, or technology ISVs. Customers that it can't yet mention by name include a financial services firm said to handle \$13 trillion worth of transactions per day.

COMPETITION

Rather than it being rare for databases to be able to handle both transactions and analytics, it's actually starting to become the norm. Databases from Oracle, IBM and Microsoft can all do this today thanks to the use of in-memory technology, although NuoDB would argue (quite rightly) that it's not so simple to scale those databases out across a cluster. Also handling both transactions and analytics are pure in-memory database providers such as SAP with HANA, MemSQL and VoltDB, to name a few.

Since NuoDB pitches its database as ideal for public or private clouds as well as containerized environments, we'd expect companies to also consider Microsoft's Azure SQL Database, or Amazon Web Services with its Amazon Relational Database Service. Additionally, there are several DBaaS technologies based on MySQL, including RackSpace's Cloud Database and Google's Cloud SQL. We'd also list Tesora, Adapt and ScaleDB in the database-as-a-service space, since NuoDB told us that it's possible it will offer a true DBaaS.

InterSystems' Cache object-relational database also offers SQL support. Smaller players claiming to handle transactional and analytical workloads include Altibase, Apache Geode (based on Pivotal's GemFire), Clustrix, GridGain Systems, Deep Information Sciences, Hazelcast, Software AG, ScaleOut Software, JustOneDatabase and LeanXcale. About to come out of beta with a database that it says is self-healing and scales out automatically is Cockroach Labs, with CockroachDB.

SWOT ANALYSIS

STRENGTHS

The ability to scale out horizontally, combined with ACID compliance and SQL support, is what sets NuoDB apart.

WEAKNESSES

The company is relatively small compared with some other players, and has been a little shy on exact customer numbers.

OPPORTUNITIES

The latest funding round of \$17m in February should help NuoDB accelerate its go-to-market activities and drum up new business.

THREATS

There are some real giants in the operational database space, and IBM, Microsoft and Oracle are all due to launch major new versions of their databases by year-end.