



Makani Networks sets sight on wide-area data storage innovation

“Makani Networks to build scalable wide-area database and storage infrastructure”

March 22, 2011 – San Francisco, California – At the world's largest gathering of cloud vendors and providers – CloudConnect 2011 held in Santa Clara – Makani Networks announced that it plans to build a gigantic wide-area data storage infrastructure for collecting, storing, processing, and mining vast amounts of data.

Today's “one-size-fits-all” relational databases were designed in the 1970s when main memory was scarce and expensive. These SQL-driven relational databases encounter three major operational bottlenecks: they lack the scalability in transactions processing due to atomic transaction-commit-to-disk; they fail to provide peta- or exa- scale level data handling necessary for large-scale data processing; and they suffer from hard-to-operate replication, fault-tolerance, and failover mechanisms.

Scaling such databases – widely-practiced through an industry concept known as “data sharding” – requires partitioning of data across multiple databases resulting in database server sprawl which then introduces additional operational complexity and database management overhead. As an example, partitioning a database for storing user credentials of a web-based portal with 100 million users requires a minimum 500 database servers in order to store the 200K user credentials with each database server.

With rapidly falling prices of DRAMs, and with the foreseeable explosion in the usage of much faster solid-state disks, it behooves us to rethink the evolution of next-generation wide-area data storage. The key challenge lies in building a fast, fault-tolerant, main-memory resident yet disk-persistent, wide-area data storage infrastructure that can automatically scale to thousands of server nodes located around the globe. In addition to enabling highly-available, persistent, wide-area distributed storage necessary for next-generation peta-scale data processing and web/video services, the storage must also provide for, for instance, ACID-style semantics of an RDBMS combined with the high read and write scalability as required in a wide variety of data-driven workloads.

Makani Networks technology derives much of its intellectual underpinnings from several notable research contributions, amongst others, including Cambridge's EDSAC, Stanford's V-kernel, MIT's Multics and RON, CMU's Coda and Odyssey, as well as Berkeley's CAP.

About Makani Networks

Makani Networks (makaninetworks.com) offers high-performance, easy-to-use and technically innovative solutions for next-generation wide-area services. Makani Mobilizer™ appliances are deployed in the customer's network for blazing-speed data access over a wide-range of access networks. Makani Enhancers™ are deployed for wide-area network ("WAN") optimization and application acceleration. Founded in 2006, Makani Networks is based in San Francisco USA.