NUODB

NewSQL

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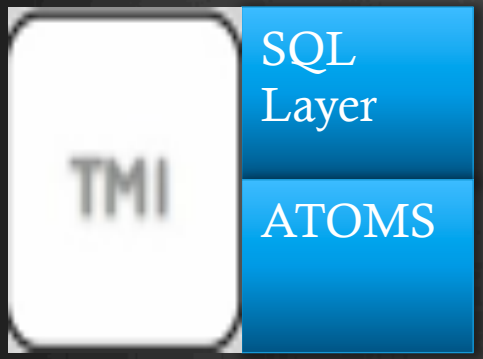
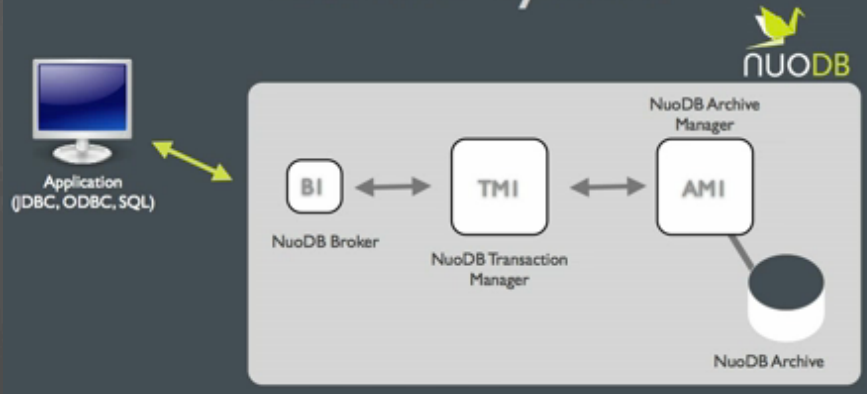
NuoDB is …

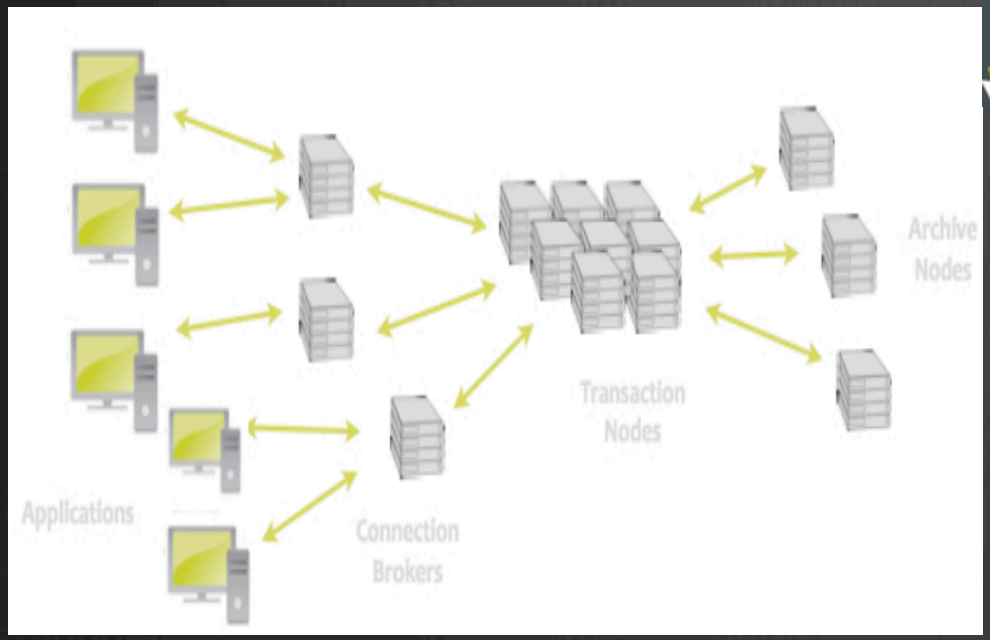
- Distributed
- Relational
- ACID-*ic*
- Mostly SQL compliant
- P2P
- Elastic?

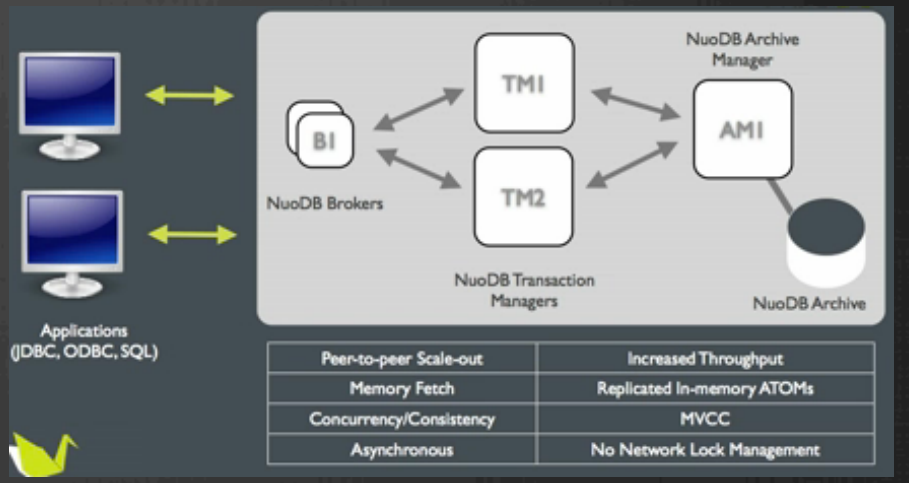


Baseline System



ATOM	Everything is an ATOM
Archive Manager	Key-value Storage
Transaction Manager	Diskless Node Performs ACID Transactions
Broker	Client Load-balancing





Peer-to-peer Scale-out	Increased Throughput
Memory Fetch	Replicated In-memory ATOMs
Concurrency/Consistency	MVCC
Asynchronous	No Network Lock Management

How Acid is achieved

A : All transactions are either made permanent when the transactions commits or are removed from the DB

C : NuoDB uses MVCC to maintain a consistent view of data among transactions. Data is NEVER *deleted* or actually *UPDATED* just versioned. This is of course relative consistency

I : Since every concurrent writes to the same object are actually creation of a new object, transactions are isolated.

D : Distributes changes to at least two archive nodes.
Archive nodes are able to write a non-buffered log of replication messages. This will enable the archive node to recover the state of the database at the time of the crash. (Could be expensive under heavy load)

CONCLUSION

It would be nice to test drive it

Sources

- http://ww1.prweb.com/prfiles/2011/08/22/8738428/NuoDB%20White%20Paper%20v310.pdf
- http://nuodb.com/how_it_works.html
- http://en.wikipedia.org/wiki/Multiversion_concurrency_control