

Unit 9

Implementing Databases with SQL

Discussion Forum – Alternatives to SQL

(Respond to Fellow Students' Discussions)

THREAD 1

From: Michael Justus

Hi Suresh,

When researching the topic of NoSQL databases, one point always seems to stand out: their ability to handle a large volume of data (you mentioned "Size of data"). But, "size" is surely only a technical limitation imposed by the underlying hardware. So I want to ask your experience: have you encountered processing limitations for traditional relational database systems regarding data size, which can be resolved if the organisation moved to a NoSQL solution?

(I ask this question because hardware is hardware, that's a common factor between NoSQL and relational: SSDs perform equally well whether accessing 10GB of data or 1GB, while network speeds or memory allocation could definitely be a limiting factor)

From: Suresh Sigera

Hi Michael,

Thanks for the question, when I say 'many NoSQL databases were built with a large scale of data in mind and can store huge amounts of rows or objects', is because one single main benefit it has over MySQL or any structured database is its ability to handle large unstructured data. People are experiencing real-world MongoDB performance mainly because it allows users to query in a different manner that is more sensitive to workload.

THREAD 2

From: Michael Justus

Hi Gennaro,

I think the statement " All the NoSql solution trade ACID principles for performance" is true (based on Brewer's "CAP" theorem) and covers every NoSQL solution. However, Binani et al. (2016) mention the concept of NewSQL that aims to bring NoSQL capabilities (high concurrency and scalability) to traditional relational databases. And indeed, graph databases are a type of NoSQL DB, and Microsoft has implemented this functionality within their SQL server engine. Considering the maturity level of NoSQL databases versus relational databases, I think it is only a matter of time until new algorithms are realised that bring NoSQL technology in line with relational databases.

References

Binani, S., Gutti, A. & Upadhyay, S (2016) SQL vs NoSQL vs NewSQL - A comparative study. *Communication of Applied Electronics*. 6(1): 1-4.
