NoSQL

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Analysis and development of information systems

REGIONAL Valley

SENA – CTA National Learning Service

Carthage

2018

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What is NoSQL?

NoSQL is a term that describes high performance non-relational databases. NoSQL databases use several data models, including those of documents, graphs, key-values and columns. NoSQL databases are famous for ease of development, scalable performance, high availability and resilience. Click the Microsoft Office button, and then click Word Options (Amazon Web Services, 2017).

NoSQL, which covers a wide range of technologies and architectures, seeks to solve the scalability and big data performance problems that relational databases were not designed to address. NoSQL is especially useful when a company needs to access and analyze large amounts of unstructured data or data that is stored remotely on multiple virtual servers in the cloud (TechTarget, 2018).

Advantages:

1. These systems respond to the needs of horizontal scalability that have more and more companies. 3
2. They can handle huge amounts of data.
3. They don't generate bottlenecks.
4. Simple scaling.
5. Different DBs NoSQL for different projects.
6. They run on clusters of cheap machines.

Disadvantages:

- The databases NoSQL to the open source have a different support to the support offered by the commercial companies to their products.
- They're not mature enough for some companies. Despite its implementation in some large companies, NoSQL databases still face a major credibility problem with many companies.
- NoSQL databases do not have many hooks for general use of BI tools (Business Intelligence), while the simplest ad-hoc query and analysis implies rather good programming knowledge.
- Lack of experience. The novelty of NoSQL means that there are not a lot of developers and administrators who know the technology-what That makes it difficult for companies to find people with the proper know-how.

- compatibility issues. Unlike relational databases, which share certain standards, NoSQL databases have few common rules. Each NoSQL database has its own API, query interfaces are unique and have peculiarities. This lack of standards means that it is impossible to simply switch from one vendor to another, in case you are not satisfied with the service (Wikipedia, 2017).

Most used NoSQL databases

1. **Cassandra:** is a database created by Apache of the key-value type. It has its own language to make queries CQL (Cassandra query language). Cassandra is a Java application, so you can run on any platform that has the JVM (Java Virtual Machine).

Figure 1. Cassandra database No SQL.

Source: Wikipedia.

2. **Redis:** It is a database created by Salvatore Sanfilippo and Pieter Noordhuis and is supported by VMWare. This is a database of the key-value type. It can be imagined as a giant array in memory to store data, which can be strings, hashes, data sets, or lists. It has the advantage that its operations are atomic and persistent. To put a paste, Redis does not allow queries, you can only insert and obtain data, in addition to common operations on assemblies (difference,

Union and insertion). Created in ANSI C, therefore, it is compatible and works smoothly on Unix, Linux and its derivatives, Solaris, OS/X However there is no official support for Windows platforms.

Figure 2. Redis NoSQL database.

Source: Médium.com.

3. **MongoDB:** This is a database created by 10gen of the document-oriented type, of free schema, ie, that each entry can have a different data schema that has nothing to do with the rest of The records Stored. It's pretty fast when it comes to running your operations because it's written in C++. For the storage of the information, it uses a own system of document known with the name BSON, which is an evolution of the known Json, But with the peculiarity that you can store binary data. In a short time, MongoDB has become a Of NoSQL's favorite

databases by developers.

Figure 3. MongoDB NoSQL database.

Source: Codearmy.co.

4. **Couchdb:** It is a system created by Apache and written in Erlang language that works on most POSIX systems, including GNU/LINUX and OSX, but not on Windows systems. Important features include the use of Restfull HTTP API as interface and JavaScript as the main interaction language. JSON files are used for data storage. Allows the creation of views, which are the mechanism that allows the combination of documents to return values of several documents, ie, CouchDB allows the accomplishment of the typical JOIN operations of SQL (Telefonica, 2014).

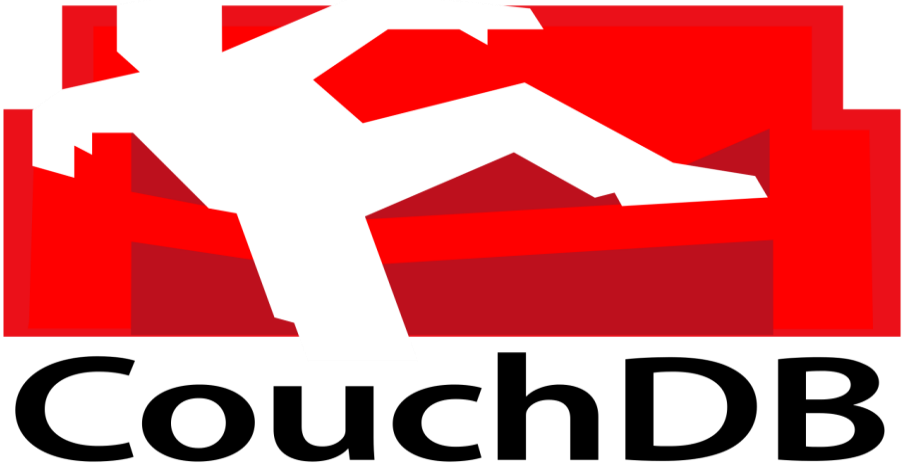

Figure 4. COuchDB NoSQL database.

Source: Sdtimes.com.

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