Commentary

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Data Migration Techniques from SQL Database to NoSQL

Roshan Chitrakar*

Department of computer applications, Nepal Open University, Nepal

***Corresponding author:** Roshan Chitrakar, Department of computer applications, Nepal Open University, Nepal, E-mail: roshan_ch@yahoo.com

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Description

With rapid-fire andmulti-dimensional growth of data, Relational Database Management System (RDBMS) having Structured Query Language (SQL) support is facing difficulties in managing huge data due to lack of dynamic data model, performance and scalability issues etc. NoSQL database addresses these issues by furnishing the features that SQL database lacks. So, numerous associations are migrating from SQL to NoSQL. RDBMS database deals with structured data and NoSQL database with structured, unshaped andsemi-structured data. As the nonstop development of operations is taking place, a huge volume of data collected has formerly been taken for architectural migration from SQL database to NoSQL database. Since NoSQL is arising and evolving technology in the field of database operation and because of increased maturity of NoSQL database technology, numerous operations have formerly switched to NoSQL so that rooting information from big data. This study discusses, analyzes and compares 7 (seven) different ways of data migration from SQL database to NoSQL database. The migration is performed by using appropriated tools/ fabrics available for each fashion and the results are estimated, anatomized and validated using a system tool called SysGauge. The parameters used for the analysis and the comparison are Speed, Prosecution Time, Maximum CPU Operation and Maximum Memory Operation. At the end of the entire work, the most effective ways have been recommended.

Data Migration Technique

In 1970, Edgar Frank Code has introduced architectural frame on the relational database approach in his paper." A relational model of data for large participated data banks". After some time Code has introduced Structured English Query Language and latterly has renamed it as Structured Query Language to give a way to pierce data in a relational database. Since also, relational model has had dominant form in the databasemarket. The most popularly has used database operation systems are Oracle, Microsoft SQL garçon and MySQL All these three DBMS are grounded on relational database model and use SQL as querylanguage.When NoSQL database has been introduced by Carlo Strozzi in 1998 as a train grounded database, it has been used to represent relational database without using Structured Query Language. Still, it has not be suitable to contend with relational database. Latterly Eric Evans an hand in Rackspace Company explained the ambition of the NoSQL movement as a new trend to break a problem that Relational Databases aren't fit. The adding operation of NoSQL products have amped other companies to develop their own results and headed to crop of general NoSQL database systems. This way there are further than 150 NoSQL products. These products come with issues like felicity to some areas of operation, security and trustability.

NoSQL databases are arising from last many times due to its lower constrained structure, scalable schema design, and briskly access in comparison to relational databases. The crucial attributes that make it different from relational database are that it doesn't use the table as storehouse structure of the data. In addition, its schema is veritably effective in handling the unshaped data. NoSQL database also uses numerous modeling ways like crucial- value stores, document data model, and graph databases.

This exploration study aims to present relative study on data migration ways from SQL database to NoSQL database. This study analyses 7 (seven) recent approaches which have been proposed for data migration from SQL database to NoSQL database. Due to massive use of mobile computing, pall computing, Internet of Effects, and other so numerous digital technologies, large volume of streaming data is available currently. Similar huge quantities of data take a great deal of challenges to the traditional relational database paradigm. Those challenges are related to performance, scalability, and distribution. To overcome similar challenges enterprises begin to move towards enforcing new database paradigm known as NoSQL

Unstructured Data

NoSQL DBMSs are distributed,non-relational databases. They're designed for large-scale data storehouse and for massive resemblant data processing across a large number of commodity waiters. They usenon-SQL languages and mechanisms to interact with data. Use of NoSQL database systems in database operation increased in major Internet companies, similar as Google, Amazon, and Facebook; which has aroused challenges in dealing with huge amounts of data with conventional RDBMS results couldn't manage. These systems can support multiple conditioning, including exploratory and prophetic analytics, ETL-style data metamorphosis, andnon-mission critical OLTP. These systems are designed so as to gauge up thousands or millions of

druggies doing updates as well as reads, in discrepancy to traditional DBMSs and data storages.

The focus of the study is to get relative study on different seven ways to resettle data from relational database to NoSQL database. Migration of data from relational database to NoSQL database refers the metamorphosis of data from structured and regularized database to flexible, scalable and less constrained structure NoSQL database. The main ideal of this exploration is to find out the most effective data migration fashion among seven major migration ways from SQL database to NoSQL database.

SQL database and other traditional databases rigorously follow structured way to organize the data generated from colorful operations but NoSQL databases give inflexibility and scalability in organizing the data which makes it easy to pierce the data. The data generated from social networking spots and real time operations needs flexible and scalable system which increases the demand of NoSQL. Hence, multidimensional model has been proposed for data migration. The biggest challenge is the migration of being data abiding in data storehouse to NoSQL database by maintaining the characteristics of the data. The growing use of web operations has raised the demand to use NoSQL because traditional databases are unfit to handle the fleetly growing data.