Abstract

Database is an important component in the development of information technology-based applications. During its development, the database is used as a storage area and historical operational data by various companies. It will speed up and simplify enterprise data management and data access. However, the performance of a database would be problematic if the data stored in the database is growing. Moreover, if the database is stored in an online system that can be accessed by anyone at any time. Database as a Service (DBaaS) is a technology that allows providers to provide database functionality as a service to one or more consumers. In addition, the form of complex queries can also have an impact on its performance. Parallel query execution is an optimization method that works by splitting the query into several sections and then worked jointly by several machines, after each finished machine part, the query is joined again to get the final result. Yet another problem arises, namely, parallel execution depends on the hardware configuration, such as the number of cores on the processor and the amount of Degree of parallelism (DOP). Therefore, the research analyzed parallel execution on the hardware configuration and the number of different DOP to obtain the optimal configuration. After getting the most optimal configuration, then implemented in the Database as a Service (DBaaS) is then performed an analysis of the performance DBaaS. The parameters of performance DBaaS is based concurrency and consistency with the test parameter response time and throughput.

Keywords : database, DBaaS, query, parallel execution, performance, concurrency, consistency, response time, throughput, DOP, hardware.