

A Cloud Computing System Using Virtual Hyperbolic Coordinates for Services Distribution

Authors : Telesphore Tiendrebeogo, Oumarou Sié

Abstract : Cloud computing technologies have attracted considerable interest in recent years. Thus, these latter have become more important for many existing database applications. It provides a new mode of use and of offer of IT resources in general. Such resources can be used "on demand" by anybody who has access to the internet. Particularly, the Cloud platform provides an ease to use interface between providers and users, allow providers to develop and provide software and databases for users over locations. Currently, there are many Cloud platform providers support large scale database services. However, most of these only support simple keyword-based queries and can't response complex query efficiently due to lack of efficient in multi-attribute index techniques. Existing Cloud platform providers seek to improve performance of indexing techniques for complex queries. In this paper, we define a new cloud computing architecture based on a Distributed Hash Table (DHT) and design a prototype system. Next, we perform and evaluate our cloud computing indexing structure based on a hyperbolic tree using virtual coordinates taken in the hyperbolic plane. We show through our experimental results that we compare with others clouds systems to show our solution ensures consistence and scalability for Cloud platform.

Keywords : virtual coordinates, cloud, hyperbolic plane, storage, scalability, consistency

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