一种改善云存储综合性能的体系结构及协调算法

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摘 要： 在深入研究云存储体系结构和影响系统整体性能相关因素的前提下，提出一种基于多个主从结构的云存储系统而构建的一种分层控制体系结构的云存储系统.然后以两种分布式文件系统构建的分层云存储系统为研究对象，给出基于该体系结构的分布式文件系统的选择算法的数学模型以及相关公式，应用案例对选择结果进行分析、测试.最后，从多个角度比较了 FastDFS、HDFS 和本文提出的分层次体系结构的性能，实验结果证明该体系结构在云存储系统中综合性能比单个系统表现更好.

关键词： 云存储；体系结构；分布式文件系统；协调

An architecture and coordination algorithms for improving the comprehensive performance of cloud storage

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Abstract： On the premise of in-depth study of cloud storage architecture and related factors affecting the overall performance of the system, a hierarchical control architecture of cloud storage system based on muti-master-slave structure is proposed by using the theory of Collaborative Artificial Intelligence. Secondly, taking two kinds of distributed file systems as the research object, the mathematical model and related formulas of the selection algorithm of distributed file system based on the architecture are given, and the selection results are analyzed and tested with a case. Finally, the performances of FastDFS, HDFS and the hierarchical architecture proposed in this paper are compared from various perspectives. The experimental results show that the overall performance of the architecture in cloud storage is better than that of a single system.

Key words： cloud storage; architecture; distributed file system; coordination

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