

Distributed System with Hierarchical Model for the Astronomical Database

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Abstract

The volume of data being made by Astronomical observatories constantly and rapidly increases. While the storage capacities of device have increased massively over the years, access speeds have not kept up. Hierarchical Database Model and Distributed System is proposed for the problem. A hierarchical database model can organize astronomy data into a tree-like structure; it accelerates the rate of querying data. A distributed system consists of multiple autonomous computers that store astronomy data; it affords analyzing a great deal of data. The hierarchical model ensures that frequent and important operations can focus on smaller and critical data-set. The overall processing time can thus be reduced. Distributed framework enables the system to incrementally manage the accumulated data. The proposed system can therefore achieve the goal of data management with scalability and performance