

e-Science应用

基于网格环境下的野外台站观测数据平台

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摘要:

数据主要来源于地理上分布的野外台站、空间观测、互联网服务机构的资源环境数据平台, 是地学研究数据与模型模拟的基础, 其数据采集、管理、融合与共享服务是野外台站观测数据平台的主要任务。基于数据来源分散和服务对象的分布特征, 本文给出了基于网格环境中地理上分布的野外台站资源环境数据平台建设框架和数据汇总、管理、融合与服务的流程, 定义和分析了各模块的关键功能与实现技术, 并在Linux环境下, 模拟野外台站环境, 对数据平台中数据复制、数据同步、统一服务的关键技术和思路进行了功能性实验, 初步建立了网格环境下野外台站的资源环境数据平台。

关键词: 资源环境数据平台; 野外观测站; Linux操作系统; Grid环境

Data Platform of Field Observation Stations Base on Grid Environment

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Abstract:

The Data Platform of Resource and Environmental Science is a foundation of data and model simulation for geography research. The data mainly comes from several field observation stations in distributed locations, spatial observation and some data service sites on the Internet. The data collection, management, assimilation and the sharing service are the main tasks of the data platform. According to the distributed characteristics of the data sources the service objects and new technology of the grid environment, in this paper we discussed the foundation of the data platform of the field observation stations' Resource and Environmental Science, and the process frame of the data together with the management, and analyzed the key functions and implementing techniques for each module. Based on simulated the environment of the field observation stations in Linux operation system, we have conducted some functionality tests of the key techniques and pathways for data replication, data synchronization and a uniformed data service on the data platform, and used acquired techniques to build a primary Data Platform of the field observation stations' Resource and Environmental Science under the grid environment.

Keywords: Data platform of resource and environmental science; Field observation stations; Linux operation system; Grid environment

收稿日期 2008-12-27 修回日期 网络版发布日期

DOI:

基金项目:

通讯作者:

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