Abstract

Data Sharing is the process of making data resources available across geographically distributed institutions working on a common purpose. When there is need or request, these data resources are transported so as to co-allocate them at desired destinations. Distributed computing, particularly Grid computing environment involves transporting huge volume of data
A Multi-Commodity Grid Logistics Model for Data Transportation in Federated Datagrid

across geographically spread sources and destinations managed by an efficient data management architecture called the Datagrid. This affinity towards movement of data is to have the data and task collocated to eliminate network traffic and to improve performance by reducing latency. Participants of the datagrid are autonomous organizations, organized in a federated fashion that can request for resources from the federation as long as they are authentic and authorized and can fall into or fall out of the grid at their own will. Data Transportation mechanism in grid can be compared to the Multi-index transportation problem i.e. an n-dimensional problem (here n = 3) and usually referred to as multi-commodity transportation problem with an additional index for handling multiple resource types. This work proposes a novel method to transport resources taking various challenges posed by the dynamic grid environment into account.

Reference


**Index Terms**

Computer Science

Distributed Systems

**Key words**

Data Sharing

Data Resource Allocation

Grid Data

Management

Grid Uncertainty