Logistical Storage

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Storing and sharing large volumes of data across geographically separated locations is a difficult problem that the community faces today. In an attempt to address this problem we are developing a flexible storage framework called Logistical Storage (L-Store). L-Store is conceptually designed using software agent technology and the Internet Backplane Protocol. The software agents provide scalability as the L-Store components can be distributed seamlessly over multiple machines. L-Store provides rich functionalities in the form of role based authentication, automated resource discovery, mirroring and striping of data (fault tolerance), policy based data management, and transparent peer-to-peer interoperability of backend storage media. These features makes L-Store an attractive solution in diverse domains such as real time telerobotic surgery, remote data mining, high energy physics, content distribution, television news archiving and many more data sharing, storage and access problems across multiple domains. L-Store is agnostic to the underlying hardware and can be installed on simple personal computers having an internal disk to a full fledged hierarchical storage system (with tapes and disk backups). Currently an L-Store storage element can read and write (RAID 5) data from local client machines and distributed storage media's at a minimum sustained rate of 10 gigabits/second. L-Store is an ongoing project and promises to be a flexible storage solution that can address the needs of a diverse set of users.