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Author Han-Jen Huang
Author's Email Address No Public.
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Abstract
Lots of network services are applied to the Internet. Server has to provide many network services and its load is getting heavier. Lots of information and data are transmitted between clients and servers, thus system design of the server is more important.

For providing available network services and high performance, it is required to balance requests from the Internet or local network, high performance and extensibility for storage system, with low cost to set up and manage easily for the whole system. We design an improved cluster system for network services on Linux that characterized by: low cost to build the cluster system, high performance and high extensibility for network file system, and load balance on cluster servers. It combines Parallel Virtual File System (PVFS) developed by parallel architecture research laboratory established by NASA Goddard Space Flight Center and Linux Virtual Server (LVS) developed by Linux LVS project development.

The cluster system is transparent to the clients from the Internet or local network as same as a site server applied to the most network services. We design the cluster system architecture with PVFS and LVS, and experiment with transmission performance on the whole system. The results reveal that the cluster system is high performance for transmission between clients and servers, high reliability and scalability to cluster application servers, and high performance and extensibility to network file system.

The cluster system is built by personal computers and designed for free software on Linux. PVFS and LVS are open source and released under the GNU General Public License. The improved system is low cost for building high performance cluster system for network services.
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