



## **ENHANCED MULTI-SERVER PARTITION ALGORITHM FOR EFFICIENT UTILIZATION OF HYPERCUBE NETWORKS**

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### **Abstract**

Video traffic on the Internet is expected to continue to grow in the near future, making the development of more efficient and scalable video delivery schemes quite indispensable. The multi-server partition (MSP) algorithm used in hypercube overlay networks partitions clients into multiple groups so that each server services one client group. The quality of the partition is evaluated on the basis of the degree of interference (DOI), which reflects the network resource usage and degree of congestion. The outputs of the MSP algorithm are mostly satisfactory. However, some outputs have unacceptably large DOI. This paper improves the MSP algorithm such that if the worst DOI among all client groups exceeds a threshold, uniform selection is used instead of the MSP algorithm. Simulation results show that large DOI values do not arise with the improved algorithm.

**Keywords and phrases:** peer-to-peer, client partition problem, hypercube, overlay network.

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