Efficient load balancer for local internet service providers based on operation research

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Abstract: Load balancing in internet services acts as a reverse proxy to distribute network bandwidth or application traffic across multiple servers. To decrease the internet route cost and to make the network intermediate devices more intelligent distance, number of hops, bandwidth capacity, equipment maintenance, power consumption ...etc must be considered... The aim is for the devices to have self-decision: acting upon data found in the network and transport layer protocols (Internet Protocol IP, Transmission Control Protocol TCP, File Transfer Protocol FTP, User Datagram Protocol UDP), and delivering the services to the secondary internet (wireless or optical fibers) ISPs. To achieve this target, the use of an operation research algorithm, such as linear programming, has been proposed to solve the problem of minimizing transport and distribution costs by developing and overcoming the transmission load cost of the path selection. The proposed EWRRLB (Efficient Weighted Round Robin Load Balancer) will assign different costs to each internet connection based not only on its capacity or priority but also on the cost of transmission paths. This allows load balancers to allocate the best economic path and the share of the bandwidth to certain connections.

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