

## **Agent Based Internet Traffic Control System**

In addressing the problem of heavy traffic on the Internet, approaches such as increase of bandwidth, adding high-speed powerful Switches and Routers are not cost effective. Further, the solution using modern protocol such as RIP, BGP, and IGRP etc. also addresses the same issue mainly by concerning limited aspects of hop counts. Despite Genetic Algorithms has shown its potential to give optimal solutions adaptively within dynamically changing situation such as network traffic, it has not been exploited within for networking traffic management sufficiently. Since traffic, it has not been exploited for networking traffic management sufficiently. Since traffic has no pre-determined pattern, the classical statistical approaches also fail. This paper describes an approach using Genetic Algorithms for traffic handling by going beyond hop counts and manipulation of routing table for traffic level.

The agent has been developed to from two agents namely; router agent and manger agent, which operates separately from the kernel of the Router. Each Router has its own router agent who does the traffic controlling while manager agent operates in one portion of the network by communicating with his router agents. Each chromosome is having three genes namely; a route identifier, traffic level of that route and its distance. Upon receiving a stream of packets to a Router, the router agent uses Genetic Algorithm technique to find an optimal will be added to the routing table and the packet stream will be transmitted. The manager agent communicates with his router agents periodically and maintains traffic information about his part of the network. The Agent has been tested using the method of simulation, which is the practical way to evaluate the system. The evaluation was carried out using a questionnaire referring to the problem addressed, approach taken, implemented prototype and lastly the overall project. It was found that the success rate is over 75% through the evaluation carried out with the support of several network administrators.