

Abstract

Nowdays, two basic routing techniques are usually applied in a packet-switched communication system is a hop-by-hop routing and source routing, but the two routing systems is still no shortage in terms of convergence speed is slow and requires large utilities that work.

In this final has been simulated for the optimization of routing in packet switched communication is by getting shortest path in order to get the best value of QoS. Searching shortest path but not using conventional methods with heuristic methods are more varied, accurate and fast, and heuristic methods to be used is Antnet algorithm.

Antnet Algorithm is the algorithm adopted from the behavior of ant colonies are naturally able to find the shortest route on the way from the nest to nearby food source, while the purpose of this thesis is to design and simulate antnet algorithm and determine the performance of this algorithm to see the Quality of Service. (QoS)

From the simulation and analysis that was conducted, found that VoIP service call results in *Antnet Algorithm* has an average value best *throughput* 25,86 kbps, *packet loss* 3,41 %, *one way delay* 107,97 ms, *jitter* 3,07 ms, whereas with OSPF has an average value best *throughput* 25,91 kbps, *packet loss* 3,19 %, *one way delay* 106,19 ms, *jitter* 3,03 ms and of course this is fulfill international standart for VoIP service.

Keyword : Packet Switched, Antnet Algorithm, Shortest QoS, Routing