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RESEARCH ARTICLE

Characteristic Evaluation of Distributed QoS Routing

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ABSTRACT

In current scenario of Internet, the demand of real time multimedia applications has been increased. These applications are bandwidth greedy, impose strict delay guarantees, stable jitter and low packet loss probabilities, which require a fixed Quality-of-Service (QoS) assurance in transmission. The present Internet routing methods, based on the best-effort paradigm, is not able to provide any performance assurance required in these applications. Here is a need of the mechanism which will consider these QoS factors(delay, jitter, bandwidth etc.) for the transmission. There are many aspects in the network which provide the guarantee of the quality of service. However the one of the key technology for providing it is the QoS routing. The basic problem of QoS routing is to find a path satisfying multiple constraints. It is focused on identifying the path that will consider multiple parameters like bandwidth, delay, jitter, cost, hop count etc. instead of one. To provide Quality of Service (QoS) guarantee both of the routing schemes –source routing and distributed routing can be used. In source routing, the path computation is done at source node whereas in distributed routing, the path computation is distributed among intermediate routers between source and destination. Both source routing and distributed routing have important roles to play in QoS routing. Source routing is seen impractical in Internet as the complete explicit path would have to be included in the IP header. In source routing, path computation is done at the source node. Whereas in distributed routing, path computation is distributed among set of intermediate nodes between source and destination. Source routing is used in today's Internet for special cases only, such as mapping the network with trace route, troubleshooting etc. Distributed routing is currently the dominant method in Internet. This paper describes the distributed routing approach and its implementation in QoS domain. Many distributed QoS routing algorithms have been proposed in literature by varying the QoS metrics and protocols. The paper discusses some of these algorithms and also provides their characteristics evaluation depicting its type, metrics considered and state information.

KEYWORDS: Distributed Routing, Quality of service, Distance vector routing, Link state routing, flooding

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