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Network Resource Optimization for Quality of Service in Multimedia Multicasting

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Abstract

Multicast is a bandwidth efficient mechanism for delivering the same data to multiple receivers simultaneously. In this paper, a well-organized method to build source specific multicast trees is proposed. This algorithm aims at reaching a high traffic balance in the network in order to avoid bandwidth bottlenecks and consequent network partitions, one of the main causes for low network performance. To do so, it computes multicast trees by dynamically selecting the least loaded available paths, obtaining an optimal distribution of network resources. Strictly integrated with the DiffServ Quality of Service (QoS) approach, the proposed multirate native multicast algorithm maps the QoS service requested by receivers into the proper DiffServ class, so as to respect the expected QoS requirements. The results are a better leverage of the network bandwidth resources, an improved QoS perceived by multicast group members, and time and resource saving due to its low computational complexity, as shown through general C++ based simulation.

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Մուլտիմեդիա մուլտիկաստինգներում սպասարկման համար ցանցի հնարավորությունների օպտիմալացում

Վ. Աղազարյան, Հ. Պեդրամ

Ամփոփում

Հոդվածում առաջարկված է լավ կազմակերպված եղանակ աղբյուրի մուլտիկատ ծառի կառուցման համար: