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PERFORMANCE ANALYSIS AND DESIGN DECISIONS FOR DYNAMIC PROXY BASED MULTICAST TECHNIQUE

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Abstract

Distributed simulations and conferences require a reliable multicast protocol that guarantees reliable data delivery in a reasonably short time. As these applications grow in use, scalability becomes an important issue. An approach to achieve scalability is to recover the lost packet locally by requesting local replier called as proxy. Proxy placement in a multicast tree is an efficient method to route packets in a overlay multicast tree and to retransmit repair packets to subgroup members in a IP multicast tree. Generally several properties are considered for placing a proxy in optimal location and selecting a node to act as a proxy. Three different analyses are made with these properties and performance measures are discussed. The analysis involves: Characteristics of multicast traffic passing through the border routers, characteristics of node to act as a proxy and role of queuing algorithms and queue size in controlling congestion of proxy connected border routers in multicast networks. Finally, some design choices are evaluated. The results obtained in this paper would be applied to any dynamic proxy placement technique.

Keywords: Proxy, Border Router, Scalability, Bandwidth, Queuing algorithms.
