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Abstract

Secure and trusted group communication is an active area of research. The growing importance of group communication based applications fuelled its popularity. The central research challenge is secure and efficient group key management. . The main issue in secure group communication is group dynamics and key management. A scalable secure group communication model ensures that whenever there is a membership change, the leader of the group generates and distributes a new group key to the group members with minimal computation and communication cost. G-LeaSel model adopts a random methodology for the selection of leader and does not analyze the selection of a trust worthy leader to entrust the critical task of key management. This paper explores the benefits of selecting trust based leader selection to perform the key management. The proposed mechanism proves to be more secure than leader selection methodology adopted in G-LeaSel. Also the proposed solution exhibits self-stabilization for hack attempts and improves the throughput of the network.

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Index Terms

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Keywords

Group dynamics G-LeaSel Trust Multicast Grid environment.