Formal Modeling of Generalized Sliding Window Protocol in Promela using Spin Root Model-Checker

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Abstract

Sliding Window Protocols are an essential means of packet-form data transmission over the network. Having fixed window widths, it suffers from certain drawbacks which can be improved using the concept of generalization of Sliding Window protocol. The generalized approach of sliding window protocol can have any combination of window sizes between Go-back-N and Selective-Repeat protocols. This paper presents the formal model checking of both Go-Back-N and Selective-Repeat protocols in ProMeLa using SPIN Root model-checker tool which would ultimately proceed in the verification of generalized version of sliding window protocol.

References

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Index Terms

Computer Science

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Keywords

Sliding Window Protocol, ProMeLa, SPIN Model-Checker tool, Internet, Data transmission, Formal Methods, Process Algebra, π-Calculus, Mobility Workbench