Abstract

This article investigates a mechanism to tolerate omission failure in moving sequencer based atomic broadcast at distributed systems. Various mechanisms are already given for moving sequencer based atomic broadcast like RMP [1], DTP [2], Pin Wheel [3] and mechanism proposed by [4]. But none of these mechanisms are efficient to tolerate different failure. Scholarly observation is that, these algorithms can tolerate only crash failure but not capable to tolerate omission or byzantine failure. This work is an extension of [4]. This work proposes a mechanism to tolerate omission failure in moving sequencer based atomic broadcast. Hence this work is a refined version of [4]. This work relies on unicast broadcast hence it will introduce a very less number of messages in comparison to previous mechanisms [5]. B [6] has been used as formal technique for development of proposed model. B uses set theory as a modeling notation, refinements to represent system at different abstraction level. Pro B [7] has been used as model checker and animator for constraint based checking, to discover errors due to invariant violation and for deadlocks, thereby, validating the specifications.

Refer
References

Rigorous Design of moving Sequencer Omission Tolerant Atomic Broadcast


Index Terms

Computer Science  Distributed Systems

Keywords

Broadcast Atomic Broadcast Total Order Unicast Sequencer Crash Omission

Model Checking

B formal method.