Abstract

In distributed system, the sites communicate with each other by exchange of messages. A total order broadcast is a reliable broadcast that ensures delivery of messages to the sites in the same order. For the fault tolerant applications, ordering algorithm must support the network partitions and site failure. In this paper, we present a formal model of total order broadcast...
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system in the presence of network partition and site failures. We have used Event-B as a formal technique for the development of our model. In this technique system is built in several stages by gradually introducing the details in the refinement steps. We outline an abstract model specifying total order broadcast and introducing the details in the refinement level for considering the case of network partitioning and site failure.

Reference

- Abrial, J.R. 1996 Extending B without changing it for developing distributed systems. In First B Conference.
- Baldoni, R., Cimmino, S., Marchetti, C., 2005 Total order communications: A practical analysis. In EDCC 2005, Mario Dal Cin, Mohamed Ka`aniche, and Andr`as Pataricza, Eds,

Index Terms

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Key words
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Formal methods
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sequencer