Abstract

While dealing with mobile distributed systems, we come across some issues like: mobility, low bandwidth of wireless channels and lack of stable storage on mobile nodes, disconnections, limited battery power and high failure rate of mobile nodes. In this paper, we design a minimum process algorithm for Mobile Distributed systems, where no useless checkpoints are taken and an effort has been made to optimize the blocking of processes. In order to keep the blocking time minimum, we collect the dependency vectors and compute the exact minimum set in the beginning of the algorithm. In coordinated checkpointing, if a single process fails to take its checkpoint; all the checkpointing effort goes waste, because, each process has to abort its tentative checkpoint. In order to take its tentative checkpoint, an MH (Mobile Host) needs to transfer large checkpoint data to its local MSS over wireless channels. The checkpointing effort may be exceedingly high due to frequent aborts especially in mobile systems. We try to minimize the loss of checkpointing effort when any process fails to take its checkpoint in coordination with others.

Reference
Dealing with Frequent Aborts in Minimum-process Coordinated Checkpointing Algorithm for Mobile Distributed Systems


N. Neves and W.K. Fuchs, Adaptive Recovery for Mobile Environments, Communications


Index Terms

Computer Science  Distributed Systems

Key words

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global state

coordinated checkpointing

mobile systems