Analysis of Various Non-blocking Coordinated Checkpointing Algorithms for Handling Failures during Checkpointing

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Abstract

A checkpointing algorithm needs to handle many issues for mobile computing such as mobility, low bandwidth of wireless channels, lack of stable storage on mobile hosts, disconnections, limited battery power and high failure rate of mobile hosts. These issues make traditional checkpointing techniques unsuitable for such environments. Minimum-process coordinated checkpointing is a very enchanting approach to introduce fault tolerance in mobile distributed systems transparently. This approach is domino-free, requires at most two checkpoints of a process on stable storage, and forces only a minimum number of processes to take checkpoint. In this paper, various Non-blocking Coordinated Checkpointing Algorithms are analyzed for
handling failures during checkpointing, which requires only a minimum number of processes to take permanent checkpoints. In case of a failure, after recovery a consistent global state is found from the existing checkpoints and the system restarts from there.

References


**Index Terms**

Computer Science  
Mobile Computing

**Keywords**

Mh- Mobile Host  
Mss- Mobile Support Station  
Cgs-consistent Global State