Abstract

Checkpointing is an efficient way of implementing fault tolerance in distributed systems. Mobile computing raises many new issues, such as high mobility, lack of stable storage on mobile hosts (MHs), low bandwidth of wireless channels, limited battery life and disconnections that make the traditional checkpointing protocols unsuitable for such systems. Minimum process non-blocking coordinated checkpointing may be useful for mobile distributed system as this approach is domino-free, requires at most two checkpoints of each process on stable storage, forces only interacting processes to checkpoint and does not suspend their underlying computation during checkpointing. Sometimes, it also requires piggybacking of information onto normal messages, blocking of the underlying computation or taking some useless checkpoints. In this paper, we propose a non-blocking minimum process coordinated checkpointing algorithm that requires minimum bandwidth over wireless channels and does not requires any induced/forced or mutable checkpoints and reduce the height of checkpointing tree without taking any extra overhead in real time.
Reference

- Guohui Li, LihChyun Shu: A Low-Latency checkpointing Scheme for Mobile Computing Systems.
Index Terms

Computer Science

Mobile Computing

Key words

Fault tolerance

checkpointing

consistent global state

domino free

coordinated checkpointing

mobile distributed systems