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In a large scale system, the percentage of node fault will increase as the number of computation nodes increases. Thus, it is hard to control or recover from the fault. The natural fault tolerance, a method that relies on a self-recovery property of the application, can be used for certain class of algorithm to allow process to recover from fault. This approach can potentially require much less storage space to keep the backup data compared to the checkpoint base algorithm.

In this work, a performance improvement of the recovery process in a natural fault tolerance method is discussed. We propose the new method calls SUSADS which is a hybrid algorithm between checkpoint base algorithm and natural fault tolerance. SUSADS balances the network capability and the computing power consumption by sending more information to neighbor node. In this work, we use parallel iterative algorithm to introduce SUSADS and compare the performance of the proposed method with a traditional checkpoint and natural fault tolerance method. It has been found that the propose method is faster and more efficient.



Student's signature



Thesis Advisor's signature

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