

## Research on Dynamic Practical Byzantine Fault Tolerance Consensus Algorithm

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**Abstract :** The practical Byzantine fault-tolerant algorithm does not add nodes dynamically. It is limited in practical application. In order to add nodes dynamically, Dynamic Practical Byzantine Fault Tolerance Algorithm (DPBFT) was proposed. Firstly, a new node sends request information to other nodes in the network. The nodes in the network decide their identities and requests. Then the nodes in the network reverse connect to the new node and send block information of the current network. The new node updates information. Finally, the new node participates in the next round of consensus, changes the view and selects the master node. This paper abstracts the decision of nodes into the undirected connected graph. The final consistency of the graph is used to prove that the proposed algorithm can adapt to the network dynamically. Compared with the PBFT algorithm, DPBFT has better fault tolerance and lower network bandwidth.

**Keywords :** practical byzantine, fault tolerance, blockchain, consensus algorithm, consistency analysis

**Conference Title :** ICPDS 2021 : International Conference on Parallel and Distributed Systems

**Conference Location :** Paris, France

**Conference Dates :** May 17-18, 2021