

**FAULT-TOLERANT ADAPTIVE ROUTING IN
DRAGONFLY
NETWORKS**

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ABSTRACT

- Dragonfly networks have been widely used in the current high-performance computers or high-end servers. Fault-tolerant routing in dragonfly networks is essential. The rich interconnects provide good fault-tolerance ability for the network.
- A new deadlock free adaptive fault-tolerant routing algorithm based on a new two-layer safety information model, is proposed by mapping routers in a group, and groups of the dragonfly network into two separate hyper cubes.
- The new fault-tolerant routing algorithm tolerates static and dynamic faults. Our method can determine whether a packet can reach the destination at the source by using the new safety information model, which avoids dead-ends and aimless misrouting.
- Sufficient simulation results show that the proposed fault-tolerant routing algorithm even outperforms the previous minimal routing algorithm in fault-free networks in many cases.



EXISTING SYSTEM

- There exists enough room to improve the effectiveness of the routing algorithm. It is quite easy for the network with increasing size to contain a couple of failures. The increasing scale of a network for a data center or a high-performance computer makes reliability a big problem.
- That is, how to tolerate faults in such a big network. We still have no work on fault tolerant routing in dragonfly networks. It is necessary to propose an efficient fault-tolerant routing algorithm in dragonfly networks.

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PROPOSED SYSTEM

propose a new two-layer safety information model, call local safety information, based on the unidirectional link failure model for fault-tolerant routing in a dragonfly network, which is different from the original definition. The groups of the network, and the routers in each group must be mapped to separate hyper cubes. Local safety information collects safety information inside separate subcubes. The new method considers safety information in two separate layers: (1) group layer, and (2) router layer in the same group.

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HARDWARE REQUIREMENTS

- Processor - Pentium-IV
- Speed - 1.1 Ghz
- RAM - 256MB(min)
- Hard Disk - 20 GB
- Key Board - Standard Windows Keyboard
- Mouse - Two or Three Button Mouse
- Monitor - SVGA

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SOFTWARE REQUIREMENTS

- Tool - Network Simulator-2
- Operating system - LINUX
- Front end - OTCL (Object Oriented Tool Command Language)

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REFERENCES

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