

Channel Load Aware Routing for Wireless Mesh Networks

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Abstract— Load-aware routing metrics aim to address congestion and load-balancing issues in wireless mesh networks by directing traffic either around or away from loaded regions of the network. However, the fact that load estimates used to choose routes are in turn affected by resulting routing changes in a cyclical manner makes it difficult to preset the sensitivity of route adaptation to load. On the other hand, desensitizing nodes to traffic load may render them unresponsive, leading to inaccuracies in load estimates and difficulties in achieving proper traffic distribution. To address these issues, we present CLAW, a novel channel load-aware routing metric that handles the routing process in a manner analogous to a feedback control system. Simulations show that CLAW significantly improves network performance in both throughput and delay against hop count and other competing load-aware routing metrics found in the literature.

Keyword—Channel load aware, load adaptive, routing metric, wireless mesh networks.



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