Abstract

Wireless Mesh Network (WMN) is one of the essential elements in the networks of the future because of its ability to provide high bandwidth wireless backbone covering a large physical region. Generally single radio mesh nodes operating on a single channel suffer from capacity issues and hence it is essential to equip mesh routers with multiple radios using multiple non-overlapping channels. But during their lifetime, multi radio wireless mesh networks suffer from link failures caused by channel interference, dynamic obstacles, and applications bandwidth demands. This paper presents a detailed analysis of various reconfiguration techniques used to recover wireless mesh network from link failures and the issues to be addressed in order to maximize the network performance. Reconfiguration schemes make use of primitive link changes such as channel, radio and route switch operations to recover WMNs from link failures. In general, reconfiguration schemes generate a set of reconfiguration plans and select the best plan according to the optimality criteria defined specific to that particular scheme. The system cooperatively reconfigures network settings among all mesh routers based on this best reconfiguration plan and thus recover from link failure.
References


Index Terms

Computer Science

Wireless
Keywords

Wireless mesh networks  reconfiguration approach  wireless link failure  recovery  performance improvement