

CBE-ABR: a cluster based enhanced routing protocol for ad hoc mobile networks

ABSTRACT

A wireless ad hoc network is a collection of two or more devices with wireless communications and networking capabilities that communicate with each other without the aid of any centralized administrators. The network topology is dynamic, because the connectivity among the nodes may vary with time due to node mobility, departures and new arrivals. Hence, the need for efficient routing protocols to allow the nodes to communicate. In a flat topology, all nodes are of the same level and functionality, thus making it simple and efficient for smaller networks. However, when the network is large with sparse nodes, the routing information becomes more complex. This is when cluster-based techniques become useful to tackle such situations. In a cluster-based routing, all nodes in the network are dynamically organised into partitions called groups or clusters. These clusters are then combined into larger partitions to help maintain a relatively stable network topology.

Keyword: Mobile ad hoc network; Routing protocols; Clusters; Associativity Based Routing (ABR); Load balance