UNIVERSITI TEKNOLOGI MARA

EFFICIENT ROUTING PROTOCOL AND TOPOLOGY IN BLUETOOTH NETWORK USING NS-2

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ABSTRACT

Bluetooth is a wireless ad-hoc network. It has three classes which covers up to 100m range. It has some limitation especially in range, number of nodes, routing protocol and topology. There are a few routing protocol that can be use in Bluetooth network such as Ad-hoc On Demand Vector (AODV), Dynamic Source Routing (DSR) and Destination Sequenced Distance Vector (DSDV). These routing protocols gives different performance in different topology and distance. Different topology are used to optimize number of device connects at a time with mesh and ring topology with DSR, AODV and DSDV routing protocol. The purpose of this project is to determine the maximum range of the Bluetooth with different topology with good performance. Furthermore, it is to identify which topology gives high performance based on parameters throughput, end-to-end delay and packet delivery ratio with DSR, DSDV and AODV routing protocol. The method used in this project is using Network Simulator 2 patched with UCBT. The result shows that DSDV routing protocol is more stable compare to DSR and AODV in ring topology. However, if one of the nodes are broken, it will affects the performance. While in mesh topology, when one of the nodes are broken, and the route are changed, the performance will have minimal change. Meanwhile, the maximum range are best at 50 meters and number of nodes gives better performance as long as it is less than 15 nodes.

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