Mobile Ad Hoc Networks (MANETs) are multihop wireless networks in which all nodes cooperatively maintain network connectivity. In such a multihop wireless network, every node may be required to perform routing in order to achieve end to end communication among nodes. These networks are energy constrained as most ad hoc mobile nodes today operate with limited battery power. Hence, it is important to minimize the energy consumption of the entire network in order to maximize the lifetime of ad hoc networks. Since the emergence of mobile computing, reducing energy consumption of battery operated computing devices has become a very active research area. The widespread popularity of mobile computing devices, such as laptops, handheld devices and cell phones, motivates this research area. These nodes need to be energy conserved to maximize the battery life. Thus, development of energy
efficient routing protocols is needed due to the limited battery power of all nodes. In this paper, we have considered two reactive protocols such as DSR and modified DSR (Efficient Power Aware Routing, EPAR) for MANETs and evaluated the energy performance metrics in all the four modes (transmitting, receiving, idle & sleep) and the residual energy. Finally, by the observations we conclude that EPAR offers the best combination of energy consumption and network life time performance.

References

Implementing an Energy Aware Issues in MANET by Designing Efficient Routing Protocol

SIGCOMM Asia, April 2005.

Index Terms

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Keywords

MANET multihop energy consumption DSR Residual energy