

An Ad Hoc Routing Protocol with Multiple Backup Routes

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Abstract

Numerous routing protocols have recently been developed for ad hoc mobile networks. Routing protocols to date can be categorized as either ‘table-driven’ or ‘on-demand’ . Many of the proposed routing protocols take the on-demand approach because this does not require keeping lots of routing information. However, these kinds of protocols are not able to react fast enough to maintain routing. In this paper, we propose a new protocol to improve existing on-demand routing protocols by constructing multiple backup routes; when the network topology changed, the proposed protocol could transmit data packets dynamically through backup routes. We then developed an analytic model to estimate the reconnection probability of the proposed algorithm. We also examined the performance by simulating the protocol using ns2. The experimental results showed that the protocol had fewer control packages, lower routing packet overhead, and a higher receiving ratio than others.

Keyword : Ad hoc network · On-demand · Backup route · ns2