Implementation and Optimization of AODV for Internet Connectivity

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Abstract—The popular method for MANET to access the Internet is choosing some gateways through which MANET can act as a subnet of the Internet. In these solutions, gateways will be the bottleneck of the whole network. Meanwhile, gateway selection and handoff are also the problems. Since aforesaid problems, a new protocol was implemented on embedded devices based on iAODV, and route optimization and link failure repair were proposed and implemented for a further step. The interconnected protocol introduced interconnected node (ICN) and wired node (WDN), and was compatible with multiple network interfaces. To access the Internet, the interconnected protocol routed ICN , WDN and WLN (wireless node) as peers. Experimental results show that in the presence of ICNs and WDNs, the new protocol has higher overall network bandwidth and better data transfer stability than AODV. When the network topology changes frequently, it tries to find a better path by route optimization, and detect or repair the link broken timely by link failure repair. In traditional MANET in which all nodes are wireless, the interconnected protocol has a similar performance to AODV.

Keyword—MANET, AODV, Connectivity for Internet, Multi-interface routing, Gateway

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