

Abstract

Voice over IP (VoIP) traffic in a multi-hop wireless mesh network (WMN) suffers from a large overhead due to mac/IP/UDP/RTP headers and time collisions. A consequence of the large overhead is that only a small number of concurrent VoIP calls can be supported in a WMN[17]. Hop-to-hop packet aggregation can reduce network overhead and increase the capacity. Packet aggregation is a concept which combines several small packets, destined to a common next-hop destination, to one large packet. The goal of this thesis was to implement packet aggregation on a Linux distribution and to increase the number of concurrent VoIP calls. We use as testbed a two-hop WMN with a fixed data rate of 2Mbit/s. Traffic was generated between nodes using MGEN[20] to simulate VoIP behavior. The results from the tests show that the number of supported concurrent flows in the testbed is increased by 135% compared to unaggregated traffic.