A DISTRIBUTED THREE-HOP ROUTING PROTOCOL TO INCREASE THE CAPACITY OF HYBRID WIRELESS NETWORKS

ABSTRACT

Hybrid wireless networks combining the advantages of both mobile ad-hoc networks and infrastructure wireless networks have been receiving increased attention due to their ultra-high performance. An efficient data routing protocol is important in such networks for high network capacity and scalability. However, most routing protocols for these networks simply combine the ad-hoc transmission mode with the cellular transmission mode, which inherits the drawbacks of ad-hoc transmission. This Project presents a Distributed Three-hop Routing protocol (DTR) for hybrid wireless networks. To take full advantage of the widespread base stations, DTR divides a message data stream into segments and transmits the segments in a distributed manner. It makes full spatial reuse of a system via its high speed ad-hoc interface and alleviates mobile gateway congestion via its cellular interface.

Furthermore, sending segments to a number of base stations simultaneously increases throughput and makes full use of widespread base stations. In addition, DTR significantly reduces overhead due to short path lengths and the elimination of route discovery and maintenance. DTR also has a congestion control algorithm to avoid overloading base stations. Theoretical analysis and simulation results show the superiority of DTR in comparison with other routing protocols in terms of throughput capacity, scalability and mobility resilience. The results also show the effectiveness of the congestion control algorithm in balancing the load between base stations.
EXISTING SYSTEM

In an infrastructure network, nodes communicate with each other through base stations (BSes). Long distance one-hop transmission between BSes and mobile nodes, the infrastructure wireless networks can provide higher message transmission reliability and channel access efficiency.

DRAWBACK OF EXISTING SYSTEM

- Suffer from higher power.
- Consumption on mobile nodes and the single point of failure problem.
- Low reliability.
- Low overhead.
- Hot spot reduction.

PROPOSED SYSTEM

Wireless networks including infrastructure wireless networks and mobile ad-hoc networks (MANETs) to increase wireless network capacity for high performance applications has stimulated. The development of hybrid wireless networks.

Wireless devices such as smart-phones, tablets and laptops, have both an infrastructure interface and an adhoc interface.

ADVANTAGE OF PROPOSED SYSTEM

- Increases the throughput capacity of a wide-area wireless network.
- High overhead.
- Hot spots.
- High reliability.
SYSTEM SPECIFICATION

Hardware Requirements

- System: Pentium IV 2.4 GHz
- Hard Disk: 40 GB
- Floppy Drive: 1.44 Mb
- Monitor: 15 VGA Colour
- Mouse: Logitech
- Ram: 512 Mb

Software Requirements

- Operating system: Windows XP
- Technology Used: Microsoft .NET
- Backend Used: SQL Server