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A NOVEL ROUTING MODEL FOR DATA INTEGRITY IN WIRELESS NETWORKS

Shanthappa[1], Dr.P.Venkateswarlu[2], S.Sree Hari Raju[3]

[1]M.Tech Student, Dept of CSE, Nagole Institute of Technology & Science, Hyderabad, T.S, India

[2]Professor & HOD, Dept of CSE, Nagole Institute of Technology & Science, Hyderabad, T.S, India

[3]Assistant Professor, Dept of CSE, Nagole Institute of Technology & Science, Hyderabad, T.S, India

ABSTRACT:

Due to complexity of applications that runs on wireless networks, quality of assurance in these networks has gained attention. Wireless sensor networks have to be proficient to manage several applications on similar platform. We intend at improving the reliability for high reliability applications and reduce end-to-end delay for delay sensitive ones, still when network is packed. We study a mechanism that permits the packets of delay sensitive to move all along shortest path as well as packets by reliability requirements to avoid promising dropping on hotspots. We set up integrity and delay differentiated routing method which is a multi-path dynamic routing method. Proposed system will separate packets of applications by means of separate needs of quality of service in relation to weight assigned to every packet, and direct them in the direction of sink all the way through various paths to get better data reliability for the applications of integrity sensitive. It will present high-quality scalability since only local information is necessary that simplifies performance.

Keywords: Wireless sensor networks, End-to-end delay, Sink, Quality of service, Multi-path dynamic routing, Hotspots, Data reliability, Scalability.

1. INTRODUCTION:

Most quality of service protocols that are projected for conventional ad hoc networks encompass huge transparency that is caused by end-to-end path detection hence they are not appropriate for the resource controlled sensor networks. A wireless network contains important requirements such as low delay as well as high data reliability that lead to delay responsive applications as well as high-integrity applications [1]. In a network by means of light load, both of the needs are readily fulfilled on the other hand; greatly loaded network will undergo congestion that enhances end-to-end delay. In our work we intend to aim a mechanism that permits the packets of delay-sensitive to move all along shortest path as well as packets by reliability requirements to avoid promising dropping on hotspots. In our work we introduce integrity and delay differentiated routing method which is a multi-path dynamic routing method. In this technique, data integrity as well as delay differentiated services are provided in similar network. The integrity and delay differentiated routing method intrinsically keep away from conflict among high integrity as well as low delay. The proposed scheme will offer high-quality scalability since only local information is necessary, that simplifies performance. By means of construction of effective hybrid potential field, the proposed system will separate packets of applications by means of separate needs of quality of service in relation to weight assigned to every packet, and direct them in the direction of sink all the way through various paths to get better data reliability for the applications of integrity sensitive and decrease end-to-end delay [2][3]. Proposed Integrity and delay differentiated routing method considers complete network as huge buffer to store excessive packets earlier than they arriving at sink.

2. METHODOLOGY:

Various applications may have various needs of quality of service and some of the applications need most of their packets to effectively appear at sink regardless of when they arrive. Our work aims at improving the reliability for high reliability applications and reduces end-to-end delay for delay sensitive ones, still when network is packed. In the illustration of small part of wireless sensor networks, assume node X is hotspot and there are high-integrity packets as well as delay-sensitive packets from the nodes of

source such as P, Q and R. A normally utilized routing algorithm will select best possible path for the entire packets. For instance, standard shortest path tree routing will send all of them towards node X as revealed infig1. This causes congestion as well as lead to numerous highest integrity packets loss as well as large end-to-end delay intended for delay responsive packets. We aim a technique that permits the packets of delay-sensitive to move all along shortest path as well as packets by reliability requirements to avoid promising dropping on hotspots and introduce integrity and delay differentiated routing method which is a multi-path dynamic routing method. The proposed integrity and delay differentiated routing method improves fidelity meant for high-integrity applications. The fundamental thought is to discover buffer space from idle paths to store excessive packets that may be dropped above shortest path. As a result, the initial task is to locate idle paths, and then subsequent task is to store packets resourcefully for consequent transmission. The proposed system will build a possible field consistent with depth as well as queue length data to discover under-utilized paths. It makes differentiation of different packets by means of weight values that are inserted into packets headers, and subsequently carry out various actions on them [4]. The system will separate packets of applications by means of separate needs of quality of service in relation to weight assigned to every packet, and direct them in the direction of sink all the way through various paths to get better data reliability for the applications of integrity sensitive. The system basis is to build appropriate potential fields to create accurate routing decisions for various types of packets. Through structuring of local dynamic prospective fields by means of different slopes in relation to weight values carried by means of packets, the proposed system will permit packets by means of outsized weight to select shorter paths. Moreover our proposed system will make use of priority queue to reduce queuing interruption of delay-sensitive packets. The integrity and delay differentiated routing method intrinsically keep away from conflict among high integrity as well as low delay. The high-integrity packets are cached above loaded paths all along which packets will experience huge end-to-end delay due to additional hops, and delay-sensitive packets move all along short paths to advance the sink to the best possible.

3. AN OVERVIEW OF PROPOSED SYSTEM:

Applications that function on identical Sensor Network platform typically have various needs of quality of Service. Two fundamental needs are low delay as well as high data integrity on the other hand, in most of these situations; two needs cannot be fulfilled concurrently. Our work improves the reliability for high reliability applications and reduces end-to-end delay for delay sensitive ones, still when network is packed. We introduce a mechanism that permits the packets of delay-sensitive to move all along shortest path as well as packets by reliability requirements to avoid promising dropping on hotspots. We initiate integrity and delay differentiated routing method which is a multi-path dynamic routing technique. The proposed system will offer high-quality scalability since only local information is necessary, that simplifies performance. It makes differentiation of different packets by means of weight values that are inserted into packets headers, and subsequently carry out various actions on them. Its basis is to build appropriate potential fields to create accurate routing decisions for various types of packets [5]. The projected system will separate packets of applications by means of separate needs of quality of service in relation to weight assigned to every packet, and direct them in the direction of sink all the way through various paths to get better data reliability for the applications of integrity sensitive and decrease end-to-end delay. The proposed system will permit packets by means of outsized weight to select shorter paths and the system will make use of priority queue to reduce queuing interruption of delay sensitive packets. The projected integrity and delay differentiated routing method improves fidelity meant for high reliability applications. Integrity and delay differentiated routing method considers complete network as huge buffer to store excessive packets earlier than they arriving at sink [6]. There are two important phases such as finding of sufficient buffer spaces from unused or else under loaded nodes, which is in fact resource discovery; caching of extreme packets in idle buffers resourcefully for ensuing transmissions.

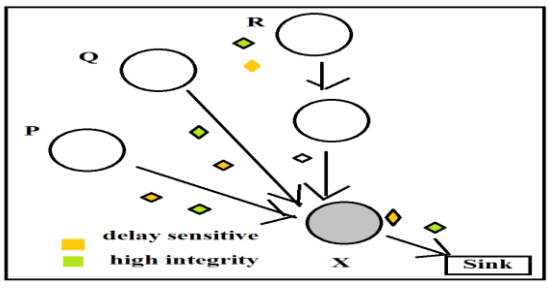

Fig1: an overview of small part of wireless network.

4. CONCLUSION:

Several mechanisms were considered to offer quality of service services particularly for wireless networks. We aim at improving the reliability for high reliability applications and reduce end-to-end delay for delay sensitive ones, still when network is packed. We aim a mechanism that permits the packets of delay-sensitive to move all along shortest path as well as packets by reliability requirements to avoid promising dropping on hotspots. In our work we commence integrity and delay differentiated routing method which is a multi-path dynamic routing method and in this technique, data integrity as well as delay differentiated services are provided in similar network. The proposed integrity and delay differentiated routing method improves fidelity meant for high-integrity applications. The basic consideration is to discover buffer space from idle paths to store excessive packets that may be dropped above shortest path. As a result, the initial task is to locate idle paths, and then subsequent task is to store packets resourcefully for consequent transmission. By effectual hybrid potential field, the planned system will separate packets of applications by means of separate needs of quality of service in relation to weight assigned to every packet, and direct them in the direction of sink all the way through various paths to get better data reliability for the applications of integrity sensitive.

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