

SLEEP AND AWAKE SCHEDULING ALGORITHM IN QOS

*V. Sangeetha**

Abstract

During the Recent days, digital application related smart grid system is used in electricity network. A smart grid is used to supply electricity to consumers via two-way digital communication monitoring, analysis, control and communication within the supply chain is enabled to improve efficiency, reduce energy consumption, cost and maximize the transparency and reliability of the energy supply chain. The computing in grid provides high power consumption, vast data storage, and collaboration possibilities to its users. In the computation accessed to networked with a single-sign-on system as the portal to the possibilities of world-wide computing grids security plays an important role. A sleep scheduling algorithm must be distributed, simple, scalable and energy efficient. One common approach is data aggregation, in which multiple data packets are combined into smaller sized packets are processed before transmission so that their transmission and reception power levels decrease.

Keywords: Scheduling, Quality of Service, Network

I. INTRODUCTION

The communication gap between smart grid Wide Area Network (WAN) and Home Area Network (HAN) is fulfilled by Neighboring Area Network (NAN) in smart grid communication networks, which offers distribution of power with capability of controlling delivery of electricity to each household and frequent monitoring. The smart grid also introduces a new level of communication between the consumer and power suppliers[1]. To design a highly

advanced system in smart grid, reliability is one of the basic standards, use to improve requirements and its features. The imminent depending on information networking that produces the smart grid to a number of potential reliability issues that are associated with both networking and communication systems while transporting a flow, the set of service requirements to be met by the network is termed Quality- of- Service (QoS), where this flow may be a packet stream[2] from host to destination (unicast or multicast) with associate in nursing Quality of Service. The QoS support capability of hybrid network is enhanced by a QoS- Oriented Distributed routing protocol[3] (QOD) resulting in Enhanced QoS Oriented routing protocol (EQOD) which is mobility resilient than QOD. This model proves that the overall quantity can be increased thus by decreasing the overhead and EQOD provides better quality on service in terms of packet overhead, output and transmission delay.

The sleep scheduling algorithm should choose the minimum number of active nodes and should satisfy the user-defined constraints. The non-sleeping nodes must be chosen in order that they're connected to the sink and that they provide some minimum coverage of the network field. User defined constraints may vary that depends on its type. The user needs a network to be connected and supply some minimum coverage for as long as possible or the user might want to connect to the full coverage of network field ensuring the delay in minimum while gathering the data.

II. SLEEP SCHEDULING METHOD

Scheduling is important for rising up the life time of network that save the time and energy that the network becomes additional study versatile and economical[4]. A scheduling in WSN, is named the packet scheduling, that is

Department of Computer Science,
Karpagam Academy of Higher Education, Coimbatore, Tamil Nadu, India
*Corresponding Author

employed for managing the sequence of packets in wireless sensing element network of the transmit and receive queues of the wireless network interface controller that is employed as circular data buffer. The routing protocol is meant for WSN during which sensing element nodes square measure static. Besides the applications are running within the WSNs need that the knowledge gathered by the sensing element nodes has to be completed and to be transmitted straight off to the sink. Moreover, it is additionally assumed that every node includes a distinctive Id and therefore the communication between neighbor nodes is symmetric and bidirectional[5]. Assumption is made that the sensor nodes clocks in the WSNs are synchronized and the nodes are triggered at the same movement and its proposed algorithm is executed. The major design objective for wireless sensor network applications is to minimize the energy consumption in order to maximize network lifetime. Among various approaches for efficient use of energy including clustering and data aggregation, sleep scheduling is the most commonly used one.

The proposed routing algorithm objectives with sleep scheduling are as follows

- (i) Mostly the sensor nodes should be in sleeping mode because the nodes reduce the energy consumption.
- (ii) The sensor nodes which consume the energy remains balanced. i.e., at any time, all the nodes should consume nearly the same amount of energy.
- (iii) The nodes should share the same load so that no other nodes are over-loaded.
- (iv) The time taken to transmit the data from sensor node to the sink the time taken is minimum.

The algorithm implies here that an broadcast tree used to make an approach to the user. The broadcast tree in the development phase is in minimum phase to reduce the energy consumption. After the completion of tree construction, each node determines their parent node. Every node is put into

sleep- mode[6]. Every time node detects a time so that it transits in active mode and the data is transmitted to parent node after each transmission, then move into sleep mode. The data is transmitted from source to sink node when a source node wants to send its data to sink node. The tree is reconstructed periodically to-make sure balanced-consumption of energy by all the nodes.

III. ALGORITHM

The algorithm determines the broadcast tree is made victimization in it. Through-put the development of the quantity of broadcast tree has minimum potential to consume minimum energy throughput of the tree construction. At the end of the construction all the node identifies its parent node. All the nodes in broadcast tree enters the sleep mode. When the node comes to the active mode it enables the transmission to parent node after the transmission is completed it enters into the sleep mode to avoid energy consumption and also the transfer rate is maximum mode. To make sure the balanced consumption of energy, the tree is constructed once in a while all the nodes.

IV. RESULTS AND DISCUSSIONS

The Network Simulator (NS2) tool is used for the proposed algorithm testing and simulation purpose. The testing scenario, the nodes coverage area is specified within the limit of 1000 meter x1000 meter. The coverage is region the nodes movement is simulated time is 58 seconds. The communication area of the nodes is 500 meters.

In Sleep scheduling the sensor networks shows the benefits in the network in terms of consumption in energy and also the efficiency and also reduces the traffic density in network. Sleep scheduling algorithm mainly reduces the power consumption and energy efficiency in the sensor network. If the nodes don't operate in the network it ensures the connectivity issues between the nodes and also the time taken to complete the transmission of data.

V. CONCLUSION

The sleep and awake algorithm is used for power efficiency and also consumes less power. The nodes which are used to be active when transmitting the nodes and becomes inactive after transmission.

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