PEAK DISPATCH ENERGY EFFICIENT SCHEDULING SCHEME FOR EFFECTUAL COMMUNICATION IN WIRELESS SENSOR NETWORK

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ABSRACT

Recent years have witnessed the emergence of wireless sensor network as a new information gathering paradigm.In which a large number of sensors scatter over a surveillance field and extract data of interests by reading real-world phenomena from the physical environment. The basic mechanism for sleep scheduling is to select a sub-set of nodes to be awake in a given epoch while the remaining nodes are in the sleep state that minimizes power consumption, so that the overall energy consumption can be reduced.

Keyword:*Geographic-distance-based connected-k neighborhood (GCKN) sleep scheduling algorithms, Wireless sensor network (WSN),Data replication(DR*).

II. SYSTEM ANALYSIS

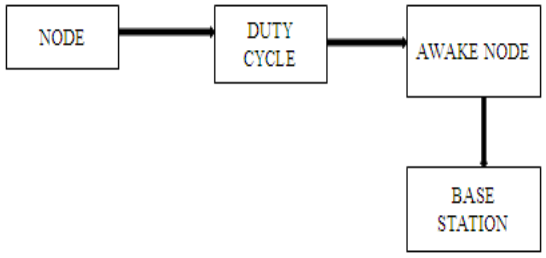
Scheduling is the method by which work specified by some means is assigned to resources that complete the work. The resources may be virtual computation elements such as threads, processes or data flows, which are in turn scheduled onto hardware resources such as processors, network links or expansion cards.A scheduler is what carries out the scheduling activity. Schedulers are often implemented so they keep all compute resources busy (as in load balancing), allow multiple users to share system resources effectively, or to achieve a target quality of service. Scheduling is fundamental to computation itself, and an intrinsic part of the execution model of a computer system; the concept of scheduling makes it possible to have computer multitasking with a single central processing unit (CPU).

I. INTRODUCTION

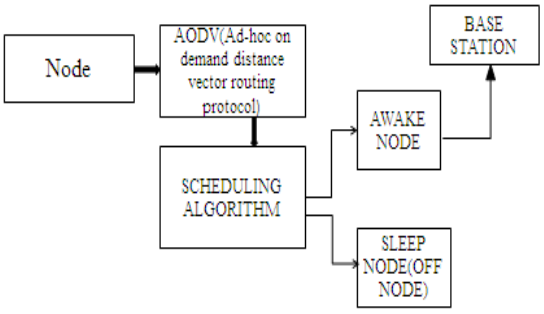
A wireless sensor network (WSN) consists of sensor nodes capable of collecting information from the environment and communicating with each other via wireless transceivers. The collected data will be delivered to one or more sinks, generally via multi-hop communication. The sensor nodes are typically expected to operate with batteries and are often deployed to not-easily-accessible or hostile environment, sometimes in large quantities.It can be difficult or impossible to replace the batteries of the sensor nodes. On the other hand, the sink is typically rich in energy. Since the sensor energy is the most precious resource in the WSN, efficient utilization of the energy to prolong the network lifetime. The communications in the WSN has the many-to-one property in that data from a large number of sensor nodes tend to be concentrated into a few sinks. Since multi-hop routing is generally needed for distant sensor nodes from the sinks to save energy, the nodes near a sink can be burdened with relaying a large amount of traffic from other nodes.

A.BLOCK DIAGRAM

NORMAL MODE



ENERGY SAVE MODE



Parameter	Parameter Value
Network size	800x600m
N	100-1000
Kc in CKN	1-10
Kr	1-10
Number of random topology	100
Transmission radius	100m
Interference radius	300m

Table.1 Evaluation Parameter

II. PROTOCOL DESCRIPTION

A.AODV(Ad Hoc On demand DistanceVector Routing):

It is a reactive routing protocol, meaning that it establishes a route to a destination only on demand. In contrast, the most common routing protocols of the Internet are proactive, meaning they find routing paths independently of the usage of the paths. AODV is, as the name indicates, a distance-vector routing protocol. AODV avoids the counting-to-

Types of operating system schedulers:

The scheduler is an operating system module that selects the next jobs to be admitted into the system and the next process to run. Operating systems may feature up to three distinct scheduler types: a long-term scheduler (also known as an admission scheduler or high-level scheduler), a mid-term or medium-term scheduler, and a short-term scheduler.

B.Process scheduler:

The process scheduler is a part of the operating system that decides which process runs at a certain point in time. It usually has the ability to pause a running process, move it to the back of the running queue and start a new process; such a scheduler is known as preemptive scheduler, otherwise it is a cooperative scheduler.

C.Long-term scheduling:

The long-term scheduler, or admission scheduler, decides which jobs or processes are to be admitted to the ready queue (in main memory); that is, when an attempt is made to execute a program, its admission to the set of currently executing processes is either authorized or delayed by the long-term scheduler. Thus, this scheduler dictates what processes are to run on a system, and the degree of concurrency to be supported at any one time – whether many or few processes are to be executed concurrently, and

infinity problem of other distance-vector protocols by using sequence numbers on route updates, a technique pioneered by DSDV. AODV is capable of both unicast and multicast routing.

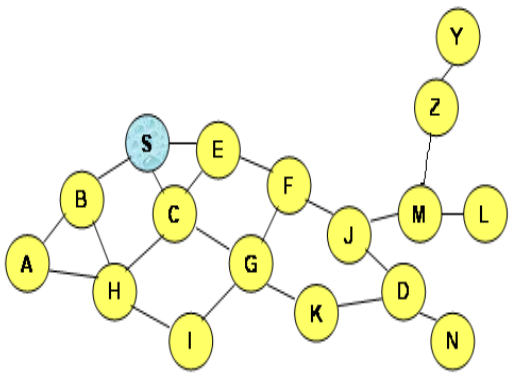


Fig.1 Represents a node that has received RREQ for D from S.

C.Distributed operation:

The protocol should be distributed. It should not be dependent on a centralized controlling node. This is the case even for stationary networks. The difference is that the nodes in an ad-hoc network can enter or leave the network very easily and because of mobility the network can be partitioned.

D. Loop free:

To improve the overall performance, the routing protocol should guarantee that the routes supplied are loop free.

E.Demand based operation:

To minimize the control overhead and wastage in the network, the protocol should be reactive how the split between I/O-intensive and CPU-intensive processes is to be handled. The long-term scheduler is responsible for controlling the degree of multiprogramming.

B.Technical Description:

The AODV Routing protocol uses an on-demand approach for finding routes, that is, a route is established only when it is required by a source node for transmitting data packets. It employs destination sequence numbers to identify the most recent path. The major difference between AODV and Dynamic Source Routing (DSR) stems out from the fact that DSR uses source routing in which a data packet carries the complete path to be traversed. However, in AODV, the source node and the intermediate nodes store the next-hop information corresponding to each flow for data packet transmission. In an on-demand routing protocol, the source node floods the RouteRequest packet in the network when a route is not available for the desired destination. A Route Request carries the source identifier (SrcID), the destination identifier (DestID), the source sequence number (SrcSeqNum), the destination sequence number (DestSeqNum), the broadcast identifier (BcastID), and the time to live (TTL) field. DestSeqNum indicates the freshness of the route that is accepted by the source.

and should not periodically broadcast control information.

F.Unidirectional link support:

The links established in radio environments can be utilized to improve the performance.

G. Security:

Radio environments are prone to impersonation attacks. In order to ensure the behavior of the routing protocols, security measures like authentication and encryption through the distribution of keys among the nodes in the ad-hoc network is challenging.

B.ENERGY SAVE MODE

The energy level is high when it is in awake node and the energy level is low if it is in sleep node indicates for the following graph. The following graph shows the comparision of the normal mode and energy save mode.

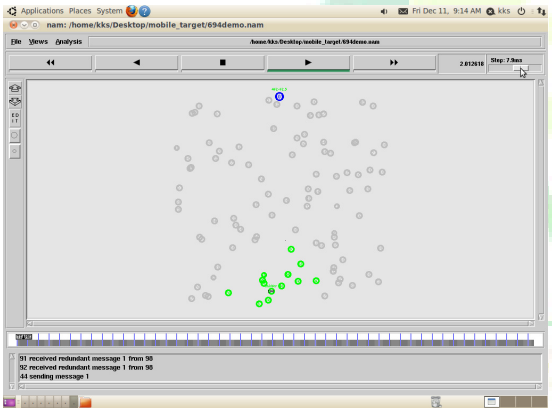


Fig.3 Energy Save Mode Nam Window

III. RESULT

Thus, the using scheduling algorithm nodes are awake, if the energy level is high. If the nodes are sleep, the energy level is low automatically. The energy will be saved for the reasonable comparision of these nodes. The green colourindicates the awake node and it represent as sniffer. Then the blue colour indicates base station and the gray colour indicates sleep node. So, finally the energy and delayness of this algorithm did not take much more time.

A.NORMAL MODE

For the following all nodes will be awake in normal mode. Because the energy level is highly,it shown in graph.

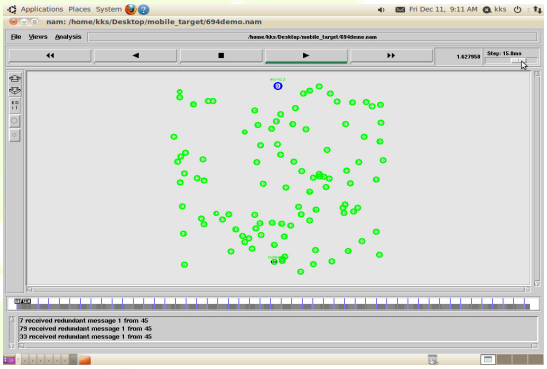


Fig.1 Normal Mode Nam Window

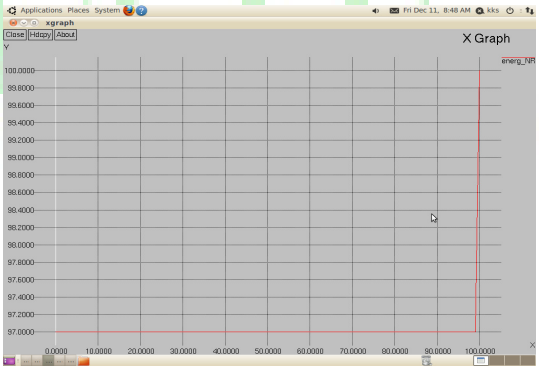


Fig.2 Normal Mode Xgraph

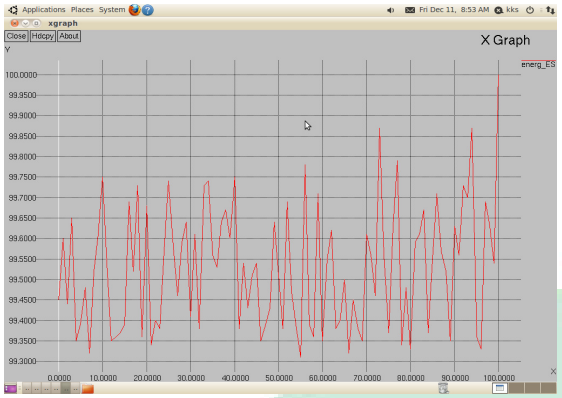


Fig.4 Energy Save Mode Xgraph

IV. CONCLUSION

The WSN is assembled of "hubs" from a couple to a few hundreds or even thousands, where every hub is associated with one (or now and then a few) sensors. Each such sensor system hub has regularly a few sections: a radio handset with an inside receiving wire or association with an outside reception apparatus, a microcontroller, an electronic circuit for interfacing with the sensors and a vitality source, for the most part a battery or an implanted type of vitality collecting. A sensor hub may shift in size from that of a shoebox down to the span of a grain of dust, albeit working "bits" of honest to goodness infinitesimal measurements have yet to be made. The expense of sensor hubs is correspondingly variable, extending from a couple to many dollars, contingent upon the many-sided quality of the individual sensor hubs.

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