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ENERGY CONSERVATION IN MANETS USING SCALABLE PROTOCOL

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ABSTRACT

Energy efficiency is the most challenging issue to be addressed by current and future mobile networks. Significant research effort has been placed recently in reducing the total energy consumption while maintaining or improving capacity either by introducing more efficient hardware components or by developing innovative software techniques. In this paper we investigate a novel networking paradigm to address the aforementioned problem. We device a decentralized scalable algorithm for the proposed postponement schemes and show the superior performance of implementing schemes over the traditional mobile operation.

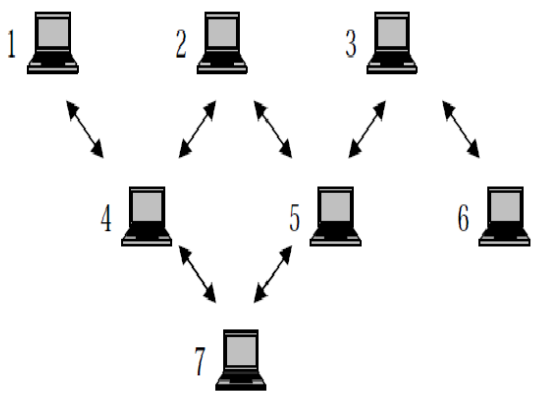
KEYWORDS
nodes; internet access; DSR protocol; scalable protocol; energy efficiency; routes handover.

I. INTRODUCTION

Nodes within an ad hoc network generally rely on batteries (or exhaustive energy sources) for power. Since these energy sources have a limited lifetime, power availability is one of the most important constraints for the operation of the ad hoc network. There are different sources of power consumption in a mobile node. Communication is one of the main sources of energy consumption .Since the rate of battery performance improvement is rather slow currently, and in the absence of breakthroughs in this field, other measures have to be taken to achieve the goal of getting more performance out of the currently available battery resources. Within this study, we focus our efforts on methods to reduce the power consumed in communications between ad hoc network nodes. Recently, mobile communications have flourished extensively with the technological advances made in areas of new portable devices and wireless communications. This has led to many advances in the area of mobile ad hoc networking. A mobile ad hoc network consists of mobile devices communicating with each other via wireless connections to both exchange information of mutual interest as well as to maintain the network connectivity in general. These devices are generally free to move about arbitrarily, and could be located on airplanes, in cars, with people, etc. We refer to these mobile devices as "*network nodes*" within this study. Therefore, an ad hoc network is generally considered an infrastructureless network that relies on its nodes to maintain its topology.

This implies that the different nodes are expected to perform, in addition to their normal function e.g. as a computing device, the routing function that is normally done by routers within the Internet infrastructure networks. The figure shows a network that consists of seven mobile nodes. The wireless links between the nodes that lie within range of each other are illustrated by bi-directional arrows. In this network, if node 1 needs to communicate with node 2, for example, it will need to do so via node 4, as one of the possible communication paths. If a node is within range of another node, for example nodes 4 and 7, they can communicate with each other directly. But, if node 7 decides to move out of range from node 4, this direct communication would no longer be possible and the two nodes would have to continue their communication via one or more other nodes.

FIGURE 1: A MOBILE AD HOC NETWORK



In this paper, we focus on ad hoc networks that conform to the following characteristics:

- The network nodes are using IP, the Internet Protocol
- The nodes could be far apart in such a way that not all of them are within range of each other
- The nodes are generally mobile and therefore two nodes that are within range
- The nodes are able to contribute to the topology maintenance operations of the network
- The network is generally bandwidth constrained as wireless links generally have lower capacity than wired links. This is a large factor of consideration in the design of the protocols that are used for the operation of these networks.
- The nodes generally possess a limited amount of battery energy.

There are numerous applications of the MANET technology. Here are some examples of their use:

- *Conferencing*: where a network infrastructure is missing while conference or meeting attendees still require exchanging emails and information regarding a certain project or task at hand.
- *Emergency Services*: for search and rescue missions, for example, where several emergency workers need to exchange information over a vast searching area with no existent network infrastructure.
- *Military Operations*: similar to the previous case, a group of military personnel may require exchanging operational information while in the field with no access to a friendly network infrastructure.
- *Sensor Networks*: in which a set of sensors with wireless transceivers can be randomly spread over an area for which terrain or environmental information gathering is needed. These sensors can cooperate in collecting and assembling this information for analysis purposes.
- *Wireless Mesh Networks*: A mesh network allows nodes or access points to communicate with other nodes without being routed through a central switch point, eliminating centralized failure, and providing self-healing and self organization. Intelligence is distributed from switches to access points by incorporating a grid-like topology. Network nodes act as routers. This type of networks can be used where wired LANs cannot be established easily, or where cost of establishing them is too high.
-

II. RELATED WORK

Nodes within an ad hoc network generally rely on batteries (or exhaustive energy sources) for power. Since these energy sources have a limited lifetime, power availability is one of the most important constraints for of the ad hoc network. There are different sources of power consumption in a mobile node. Communication is one of the main sources of energy consumption .Since the rate of battery performance improvement is rather slow currently, and in the absence of breakthroughs in this field, other measures have to be taken to achieve the goal of getting more performance out of the currently available battery resources. Within this study, we focus our efforts on methods to reduce the power consumed in communications between ad hoc network nodes.

As indicated in the discussion and results above, many routing algorithms have been created based on various strategies with no policy to address energy efficiency issues. We have seen some examples of these algorithms in which the nodes spend a large percentage of their energy in idle mode, which is considered a source of large energy waste. We have also seen that despite the existence of idle energy which, in a way, introduces a source of energy balance between network nodes, there still exists some imbalance between node energies. In order to address these issues, a different strategy that takes energy efficiency into consideration needs to be followed. The possibilities for this strategy range from creating new energy-efficient routing protocols to enhancing existing ones to become energy efficient. There have been several studies that explored this issue and we will be discussing some of these studies in the next chapter. Emerging from the discussions so far are the following main issues that we would like to address within the scope of this work:

A large amount of energy is wasted while the wireless interfaces of the mobile nodes are idle

Energy imbalance between network nodes

Existence of routing protocols with energy-inefficient characteristics

III. ENERGY MODELS

Following are the types of energy consumption that have been identified:

- Energy consumed while sending a packet
- Energy consumed while receiving a packet
- Energy consumed while in idle mode
- Energy consumed while in sleep mode which occurs when the wireless interface of the mobile node is turned off

It should be noted that the energy consumed during sending a packet is the largest source of energy consumption of all modes.

A. Energy consumption issues

To get an idea about the nature of some of the energy consumption issues that are encountered in ad hoc networks, we performed a comparison study of some popular ad hoc routing algorithms. These two algorithms use the shortest-path routing strategy and do not have an energy conservation technique. We demonstrate the difference between the algorithms in terms of their energy consumption. We used the ns2 simulator to conduct our investigation. We also used the wireless and mobility enhancements to ns2.We use a relatively high value for the maximum node speed and run simulations for different pause time values for this speed. Our goal is to examine and compare the energy consumption patterns at a mobility condition that would cause the topology to change relatively fast.

B. Energy Limitations

Generally speaking, nodes within ad hoc networks rely on limited energy sources, usually batteries, for their operation. While energy is consumed by different aspects of the functionality of a mobile node, we focus our attention in this study on those aspects that relate to communication between network nodes. Nodes consume energy when they transmit data to a desired destination, when they forward data while acting as intermediate nodes between source and destination nodes, or when they listen to a channel. Since nodes cannot operate without energy, and since energy in mobile nodes could be highly limited due to the generally limited battery power, this can be considered one of the most important limiting factors in operating an ad hoc network. Every time a node transmits, receives or listens to a communication medium, it consumes energy as will be explained in detail later in this thesis. This underscores the importance of energy conservation in connection to communications in ad hoc networks. This research focuses on creating an energy efficient technique that works in conjunction with existing ad hoc routing protocols.

IV. PROTOCOLS USED

A. *Distance Source Routing Protocol*

'Dynamic Source Routing' ***(DSR)*** is routing protocol for wireless mesh networks. It is similar to AODV in that it forms a route on-demand when a transmitting computer requests one. However, it uses source routing instead of relying on the routing table at each intermediate device.

Determining source routes requires accumulating the address of each device between the source and destination during route discovery. The accumulated path information is cached by nodes processing the route discovery packets. The learned paths are used to route packets. To accomplish source routing, the routed packets contain the address of each device the packet will traverse. This may result in high overhead for long paths or large addresses, like IPv6. To avoid using source routing, DSR optionally defines a flow id option that allows packets to be forwarded on a hop-by-hop basis.

This protocol is truly based on source routing whereby all the routing information is maintained (continually updated) at mobile nodes. It has only two major phases, which are Route Discovery and Route Maintenance. Route Reply would only be generated if the message has reached the intended destination node.

B. *Ad hoc On Demand Vector*

Ad hoc On-Demand Distance Vector (AODV) Routing is a routing protocol for mobile ad hoc networks (MANETs) and other wireless ad-hoc networks. It is jointly developed in Nokia Research Center, University of California, Santa Barbara and University of Cincinnati by C. Perkins, E. Belding-Royer and S. Das.

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-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.

C. *Scalable Protocol*

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.

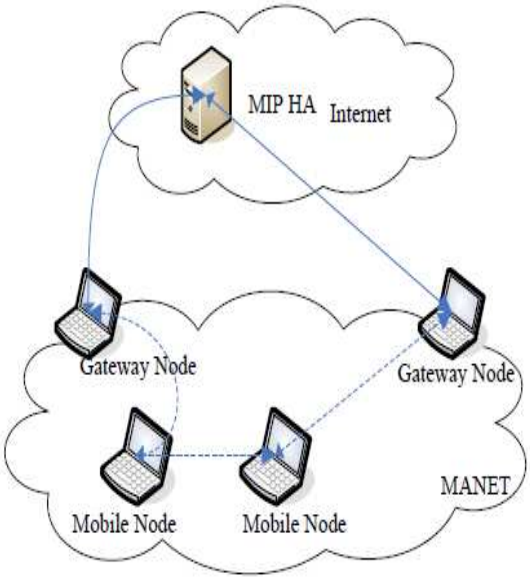
In the proposed protocol, the network is silent until a connection is needed. At that point the network node that needs a connection broadcasts a request for connection. Other nodes in the protocol forward this message, and record the node that they heard it from, creating an explosion of temporary routes back to the needy node. When a node receives such a message and already has a route to the desired node, it sends a message backwards through a temporary route to the requesting node. The needy node then begins using the route that has the least number of hops through other nodes. Unused entries in the routing tables are recycled after a time.

D. *NS2*

In communication and computer\network research, **network simulation** is a technique where a program models the behavior of a network either by calculating the interaction between the different network entities (hosts/routers, data links, packets, etc) using mathematical formulas, or actually capturing and playing back observations from a production network. The behavior of the network and the various applications and services it supports can then be observed in a test lab; various attributes of the environment can also be modified in a controlled manner to assess how the network would behave under different conditions. When a simulation program is used in conjunction with live applications and services in order to observe end-to-end performance to the user desktop, this technique is also referred to as network emulation.

NS2 is a piece of software or hardware that predicts the behaviour of a network, without an actual network being present.NS2 is a software program that imitates the working of a computer network. In simulators, the computer network is typically modelled with devices, traffic etc and the performance is analysed. Typically, users can then customize the simulator to fulfill their specific analysis needs. Simulators typically come with support for the most popular protocols in use today, such as WLAN, Wi-Max, UDP, and TCP

FIGURE 2



V. ANALYSIS

In the due course of our research for the paper we came across the various prospects available for the further research in the field of ad-hoc networks. The problems like gateway discovery delay and lack of energy efficiency are all interdependent and can be overcome by little changes in the presently available protocols. Therefore, our focus is to create an algorithm that can be used in conjunction with existing routing protocols as opposed to replacing them. This algorithm will integrate with these protocols and complement their functionality from an energy-efficiency perspective. In order to address these issues, a different strategy that takes energy efficiency into consideration needs to be followed. The possibilities for this strategy range from creating new energy-efficient routing protocols to enhancing existing ones to become energy efficient.

It is evident that energy efficient schemes are of crucial importance in the context of ad hoc networks. Since the goal is to save energy, and since one of the main sources of unwanted energy consumption is idle energy, the need to eliminate or reduce this energy becomes one of the main targets of such schemes. This requires the energy efficient mechanism to introduce some arrangement that includes sleep periods of the network nodes' wireless interfaces to lower this unwanted source of energy consumption.

VI. CONCLUSION

With the help of the scalable protocol we will be able to overcome the battery efficiency issues and increase the battery life. Thus we will be able to reduce the energy consumption during the processing of Manets thereby making Manets friendlier for long term usage. By doing this we will be able to popularize Manets in areas where the need of a global network is compromised owing to the lack of energy resources. Recently, mobile ad hoc networks (MANET) and their applications have become quite popular with the proliferation of light-weight mobile devices that made it possible to communicate and perform many types of tasks while on the move. Many protocols have been developed to handle routing in ad hoc networks. Each of these protocols has been developed based on different design strategies with the purpose of obtaining the best possible performance and robust data delivery in an environment with potentially constantly changing topology. Many of these algorithms, however, have not considered one important aspect of the operation of this type of networks which is the generally limited amount of energy that is available to its nodes. This can be considered the most critical factor in the operation of these networks. In this thesis, we presented the main characteristics of the mobile ad hoc networks as well as the factors that affect their operation. Then, we described the energy efficiency issues that are encountered with this type of networks and supported this discussion with a case study. This case study showed that there exists a large amount of energy (more than 50% of the overall energy that is consumed in communication) that is wasted while the wireless interfaces of the network nodes are in idle mode. We then described some of the schemes that were devised to address energy efficiency issues in MANETs. We classified such schemes as routing and

non-routing energy-efficient schemes. According to this classification, the routing schemes are either energy-efficient routing algorithms or algorithms that directly influence the routing functionality of the routing protocol. The non-routing schemes, on the other hand, are those that do not directly affect the routing functionality of the routing protocol in use. We found from this survey that most of the routing-related energy efficient schemes focus mainly on energy balance between routes and do not take idle energy consumption into consideration. The non-routing energy-efficient schemes had various strategies for addressing the idle energy consumption. Most of these schemes, however, did not pay attention to energy fairness, and some of them have been designed based on rather unrealistic assumptions about network operation.

VII. ACKNOWLEDGEMENT

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VIII. REFERENCES

1. Hong X.; Xu K.; Gerla M. *Scalable Routing Protocols for Mobile Ad Hoc Networks*, IEEE Network, July/August 2002.
2. Laura Marie Feeney, *An Energy Consumption Model for Performance Analysis of Routing Protocols for Mobile Ad Hoc Networks*, Mobile Networks and Applications 6, Kluwer Academic Publishers,2001
3. Mbarushimana, A. Shahrabi, "*Comparative Study of Reactive and Proactive Routing Protocols Performance in Mobile Ad Hoc Networks*", 21st International Conference on Advanced information Networking and Applications Workshops (AINAW'07), IEEE Computer Society, March 2007.
4. McCanne S.; Floyd S. ns Network Simulator. *http://www.isi.edu/nsnam/ns/*. Fall K; Varadhan K., and the VINT project. The ns manual.
5. Nicola Costagliola,Pedro Garçia López,Francesco Oliviero and Simon Pietro Romano*, Energy- and Delay-Efficient Routingin Mobile Ad Hoc Networks,* Springer Science+Business Media, LLC 2011.
6. Panayiotis Kolios, Vasilis Friderikos and Katerina Papadaki, *A Practical Approach to Energy Efficient Communicationsin Mobile Wireless Network,* Springer Science+Business Media, LLC 2011.
7. Sun Bin, Shi Denglian and Yuan Bai, *Interconnect Between MANET And Internet Design and Implementation of Mobile Gateway Based On DSR protocol*, IEEE, 2009.
8. Wakikawa R.; Malinen J.; Perkins C.; Nilsson A.; Tuominen A.J. *Global Connectivity for IPv6 Mobile Ad Hoc Networks*, IETF Internet Draft, November 2001.Work in progress.

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