To Minimize the Buffer Size in Mobile Adhoc Network

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Abstract- The distance vector algorithm that is suitable for use with adhoc networks AODV avoids problems with previous proposals notably DSDV, and has the following features. Nodes store only the routes that are needed .Need for broadcast is minimized Reduces memory requirements and needless duplications, Quick response to link breakage in active routes. Loop free routes maintained by use of destination sequence numbers. The most important characteristics of MANET is the dynamic topology, nodes can change position dynamically therefore a need of a routing protocol that quickly adapts to topology changes. The Dynamic Source Routing protocol, a simple as well as an efficient routing protocol is designed particularly for use in multi-hop wireless ad hoc networks, allows the network to be entirely self-organizing and self-configuring, without the requirement of any presented network infrastructure or the administration.

Keywords: DSR Protocol, MANET, ADOV, DSDV

I. INTRODUCTION

In a general-purpose computer that can be easily moved from place to place, but cannot be used while in transit, usually because it requires some "setting-up" and an AC power source. The most famous example is the Osborne1Portable computers are also called a "transportable" or a "luggable" PC.

A tablet computer that lacks a keyboard (also known as a non-convertible tablet) is shaped like a slate or a paper note

book. Instead a physical keyboard it has a touch screen with some combination of virtual keyboard, stylus and/or handwriting recognition software. Tablets may not be best suited for applications requiring a physical keyboard for typing, but are otherwise capable of carrying out most of the tasks of an ordinary laptop.

A personal digital assistant (PDA) is a small, usually pocket-sized, computer with limited functionality. It is intended to supplement and to synchronize with a desktop computer, giving access to contacts, address book, notes, e-mail and other features.

II. RELATED WORKS

DSR Protocol

The Dynamic Source Routing protocol, a simple as well as an efficient routing protocol is designed particularly for use in multi-hop wireless ad hoc networks, allows the network to be entirely self-organizing and self-configuring, without the requirement of any presented network infrastructure or the administration. All aspects of the protocol work entirely on-demand, permitting the routing packet overhead to scale automatically to only which needed to respond
to various changes in the different routes currently in use.

ADOV Protocol

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 Route

Request packet in the network when a route is not available for the desired destination. It may obtain multiple routes to different destinations from a single Route Request. The major difference between AODV and other on-demand routing protocols is that it uses a destination sequence number(DestSeqNum) to determine an up-to-date path to the destination. A node updates its path information only if the DestSeqNum of the current packet received is greater or equal than the lastDestSeqNum stored at the node with smaller hop count.

OLSR Protocol

OLSR makes use of "Hello" messages to find its one hop neighbors and its two hop neighbors through their responses. The sender can then select its multipoint relays (MPR) based on the one hop node that offers the best routes to the two hop nodes. Each node has also an MPR selector set, which enumerates nodes that have selected it as an MPR node. OLSR uses topology control (TC) messages along with MPR forwarding to disseminate neighbor information throughout the network. Host and network association (HNA) messages are used by OLSR to disseminate network route advertisements in the same way TC messages advertise host routes.

III. CHANNEL HOGGING AND FILE SHARING

There will be a hit to file sharing, the normal web surfer would want to look at a new web page every minute or so at 100 kbsa page loads quickly. Because of the changes to the security of wireless networks users will be unable to do huge file transfers because service providers want to reduce channel use. AT&T claimed that they would ban any of their users that they caught using peer-to-peer (P2P) file sharing applications on their 3G network. It then became apparent that it would keep any of their users from using their iTunes programs. The users would then be forced to find a Wi-Fi hotspot to be able to download files. The limits of wireless networking will not be cured by 4G, as there are too many fundamental differences between wireless networking and other means of Internet access. If wireless vendors do not realize these differences and bandwidth limits, future wireless customers will find themselves disappointed and the market may suffer setback

IV. ARCHITECTURE OF MOBILE COMPUTING AND COMPONENTS

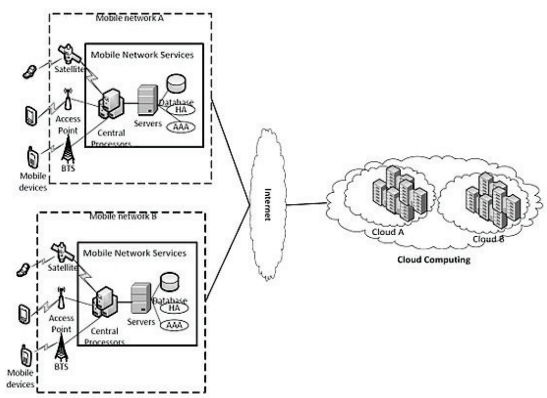

Fig: Architecture

Addressing the above mentioned tasks we propose a mobility supporting architecture. This architecture consists of a Mobility Service Architecture, describing the way we implement our mobility services in a computer system, and a Mobility Environment Architecture describing how data are transmitted between computers in mobile environments and what tasks the different stations fulfill in our architecture.

V. MOBILITYSERVICES ARCHITECTURE

Mobility services can be classified into three groups. First there are services designed to overcome common restrictions of mobile computing, which arise mainly from the slowness, insecurity and instability of wireless or analogous connection lines utilized by the mobile user. These services are called common mobility services (CMS). Examples are connection management, caching or encryption services.

The second group of services handles the management and administration of mobile users moving around and connecting their portables to networks at different places. These mobility management services (MMS) include tasks such as the authentication of users, accounting and billing issues or profiling of the users' habits.

The tasks necessary to adapt certain existing applications to mobile usage are implemented by high level services, which are called special mobility services (SMS). Special mobility services adapt existing services to the mobile conditions. For example to allow remote database access over a wireless connection line one has to take special care of possible frequent connection losses especially in the context of the state of the database.

Viewing services as distinct building blocks, we are able to sketch architecture for a "mobility services enhanced system".

VI. Mobility Environment Architecture

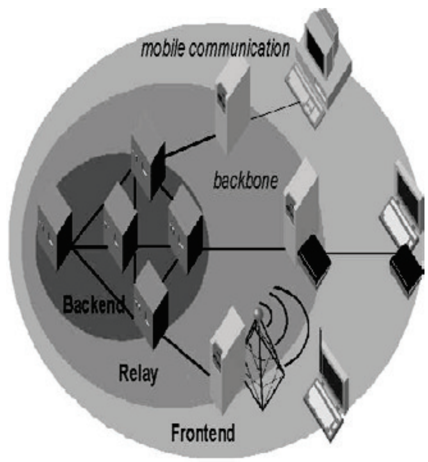

Fig: Mobility Environment Architecture

To overcome restrictions in mobile computing the above architecture was designed; the architecture consists of the following parts: The network environment consists of mobile hosts fixed hosts and certain access points. The fixed hosts are all connected to a backbone (i.e. the Internet). Mobile hosts usually don't contact them directly, but use physically closer located hosts as access points to the backbone for means of minimizing the distance which has to be bridged by a mobile connection line. In addition to the users carrying a portable computer with them, also mobile users travelling between fixed hosts are considered in our system.

To distinguish from conventional client-server and network tunneling systems we chose the notions frontend for a mobile host, backend for a fixed host that is servicing mobile nodes andrelay for an access point to the backbone. The system could be modeled using the familiar client-server notion when full connectivity is guaranteed. But when dealing with weak and sometimes fully broken lines, traditional client-server terms are not sufficient any more to model the system. E.g. in the case of full disconnection the frontend will simulate the connection to the server using cached data. Similarly a relay in our system provides more functionality than a convenient gateway does. It offers important services for mobile hosts, especially an elaborate authentication and authorization service which is of special importance for a secure mobile system.

ODBC defines a standardized method for accessing databases and is based on a client/server model. This ODBC service driver was enhanced by us to fit the needs of mobile computing data (e.g. the table of content of a lengthy text).

VII. Important components of a mobile architecture

- **Scalability** – A Mobile Architecture must be able to be utilized with all recovery requirements on both large and small scale.
- **Secure** – Encryption is important, transmission protocols must support encryption (SSL) via secure transit such as HTTPS

- **Reliable** – Reliability is always important in all technologies and mobile architecture is no different

VIII. CONCULSION&FURTURE ENHANCEMENT

All aspects of the protocol work entirely on-demand, permitting the routing packet overhead to scale automatically to only which needed to respond to various changes in the different routes currently in use. A neighbor coverage-based probabilistic rebroadcast protocol for reducing routing overhead in MANETs. In order to effectively exploit the neighbor coverage knowledge, we propose a novel rebroadcast delay to determine the rebroadcast order, and then we can obtain the more accurate additional coverage ratio by sensing neighbor coverage knowledge. We also define a connectivity factor to provide the node density adaptation. By combining the additional coverage ratio and connectivity factor, we set a reasonable rebroadcast probability. Our approach combines the advantages of the neighbor coverage knowledge and the probabilistic mechanism, which can significantly decrease the number of retransmissions so as to reduce the routing overhead, and can also improve the routing performance.

The protocol mitigates the network collision and contention, so as to increase the packet delivery ratio and decrease the average end-to-end delay. The simulation results also show that the proposed protocol has good performance when the network is in high density or the traffic is in heavy load.

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