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Destination Sequenced Distance Vector Routing Analysis with MANET

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Abstract :A mobile ad-hoc network is a collection of nodes connected to a wireless device that creates rapidly changing topology. The mobile ad-hoc network can be specified as a network without any physical connection. These networks do not have fixed topology due to the nodes, interference, multipath publicity and the path harm mobility. Therefore, these networks require a dynamic routing protocol to work properly. Several routing protocols have been prepared to accomplish this task. Continuous control of distance vector routes has been established on the basis of traffic and they are available all the time. Each node contains one or more tables in which the other nodes in the network contain root information. Nodes constantly update the tables to provide a fresh view of the entire network. Updates are so frequent that to ensure that the ad should be regularly enough, every node in the network can find almost every other node. This letter works in conjunction with analysis of destination indexed distance vector routing performance in different scenarios in two performance metrics like packet end delay and packet delivery ratio during transmission.

Keywords : MANET, NS2, DSDV, Distance Vector Analysis, End to End Delay, Packet delivery ratio.

I. INTRODUCTION

MANET is the new emerging technology that enables users to communicate without any physical infrastructure. MANET is self-organizing and adaptive network should be capable of detecting the presence of other devices in the mobile ad-hoc network and setting appropriate for the communication and sharing of data and service. Ad-hoc networking [1] [2] allows the device to easily connect and remotely connect and remove networks and networks, while maintaining connections in the network. Due to the mobility nature of MANET, network topology can change over time faster and unexpectedly. Message routing is a problem in a decentralized environment where topology fluctuates. While the function based on a fixed cost on a fixed network, from a source to a destination is usually the optimal path, then this concept is difficult to expand in MANET. Routing concept basically involves two activities: First, determine the optimal path and second, transfer information groups (called packets) through an internetwork. Routing protocols for wired networks generally do not need to control the mobility of nodes in the system. Conversely, mobility and resource constraints have basic features in MMET.

Mobile ad-hoc networks do not have trustworthy institutions like router, because every node in the network is likely to participate in the routing function. Therefore, the routing protocol needs to be specifically designed for MANET. Routing is the most fundamental research issue in MANET and should deal with limitations like high power consumption, low bandwidth, high error rates and unexpected speed of nodes. Generally, existing routing protocols for MANET can be classified into the following categories: Active or Table-Based Routing Protocol [1] [2], The purpose

of this paper is to present the routing protocol in MANET and compare the routing methods and the length of the overhead associated with each method between these protocols. MANET is the new emerging technology that enables users to communicate without any physical infrastructure. MANET is self-organizing and adaptive network should be capable of detecting the presence of other devices in the mobile ad-hoc network and setting appropriate for the communication and sharing of data and service. Ad-hoc networking [1] [2] allows the device to easily connect and remotely connect and remove networks and networks, while maintaining connections in the network. Due to the mobility nature of MANET, network topology can change over time faster and unexpectedly. Message routing is a problem in a decentralized environment where topology fluctuates. While the function based on a fixed cost on a fixed network, from a source to a destination is usually the optimal path, then this concept is difficult to expand in MANET. Routing concept basically involves two activities: First, determine the optimal path and second, transfer information groups (called packets) through an internetwork. Routing protocols for wired networks generally do not need to control the mobility of nodes in the system. Conversely, mobility and resource constraints have basic features in MMET.

II. MANET ROUTING

All routing concepts basically have two kinds of activities: first, to determine the best routing path and (also via the Internet) the packet is also moved to another, as a message group. As the network topology of the constantly network modification, the node problem between the routing packets becomes a challenging task. Most protocols should be based on rather than operational responses. Another challenge for routing is that the random motion of the nodes in the network is no longer stable. It can potentially include a path between nodes, which is more complex than a hop communication.

Routing must deal with MANET's most fundamental research topics and high power, low bandwidth, high bit error rate and limit this unexpected speed node. There are routing restrictions below MANET:

- Asymmetric links: fixed networks rely on always fixed symmetric links. However, the ad hoc network nodes are moving, changing the location of the network.
- Determining route costs at an ad hoc network node often changes its location within the network. Then, caused some of the routing table flooding the route, which is unnecessary routing overhead.
- Intervention: Based on mobile and transmission characteristics, the ad hoc network link can be sent and may damage the total transmission.
- Dynamic topology: You can move the node or change the properties of the media. In an ad hoc network, the routing table should reflect any topology changes and optimize the routing algorithm.

III. DESTINATIONSEQUENCED DISTANCE VECTOR

DSDV is an active protocol, each node should maintain a routing table regularly, routing updates are designated for packet transmission. Continuous flow transmission route protocol is installing control based on DSDV. These routes are always available during the transmission. Nodes often need to update the table to provide a new view of the entire network. Very often updated, and therefore should be broadcast on a regular basis to ensure that each node can almost always find a second node in the network. This technique is very good, but time-consuming. Routing Overhead Because this technique should be defined before transmission of more route packets, and so

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much that the protocol is delayed [5] since all the routes, will be maintained on an ongoing basis. The agreement strives for continuous, updated routing information from each node to keep every other node in the network. Routing Information Generally, the number of tables being stored for forwarding packets is essential. As a network topology change, these tables will be updated regularly.

IV. DSDV TECHNOLOGY

The main idea behind the protocol is the DSDV destination for obtaining the freedom of circulation in the network using the serial number of no coordination between the nodes. The network will have one of the nodes in itself - to maintain the increasing sequence number. These nodes also try to maintain the highest known serial number of the routing table for each destination, also known as the serial number of the target node. The network has been marked as the serial number for this special destination node, exchanging information between exchanges of information between each distance of a distance vector protocol distance vector protocol for each destination in the neighbors. To determine two nodes, the freshness relative to the sequence number of all nodes in the network generates the same destination distance information. Any valid route system for the destination was added to keep the irreversible to prevent routing loops from the destination sequence number in the network.

V. SIMULATION AND EVALUATION

The Environment for simulation used with this, evaluation of the simulation model experiment based network simulator-2 protocol. The instructions emulator can be applied to display the network topology, and the speed pattern can be applied to specify the network node, and generates a data trace file [11] configuring the source and receiver and services.

Network emulation routing and multicast routing protocols provide good support of Ns-2 Wire and Wireless Networks. NS2 is a combination of two simulation tools, network simulator (ns), various traditional protocols (nam) animator network view tool for real network simulations.

[A]. TRAFFIC MODEL

In this work, we use continuous bit rate productivity to simulate the network. Prior to the nodes, the source and destination shared distributed random distribution networks are typically 512 bytes and packets to perform the analysis tasks of our experiments. For the transfer rate for the source and node hand and the number of packet change over time, to change the proposed load network.

[B]. MOBILITY MODEL

The mobile model we use [1] [10] model was selected as a random coordinate in a rectangular area, which is configured to multiply 500 500 having 100 contract areas. In a communications network, each data packet starts from the source site to random to a specific destination node and the random route through the designated network is random speed. When you reach the destination, the destination node specifies another random one again. In the network, analog clock, responsible for the relative speed of the network nodes effect. In this network the node with the traffic protocol navigation landscape, in order to obtain a good experimental output.

[C]. SIMULATION MODEL

Network Simulator NS2 [7] simple effective event-driven simulation software can be used to implement test logic networks, but also shorten the practical implementation of network load. NS2 offers a variety of

features to simulate the efficiency of wired and wireless networks, and also supports most protocols. We have performed a simulation of performance assessment based on mobile dedicated network routing protocols having many network parameters [10] [11].

In order to achieve our goals and objectives, we really need to investigate when the node becomes more load with different DSDV network pause how to implement the agreement. In this work, simulation network simulation has been completed 2.34.

VI. PERFORMANCE MATRICES

Some important metrics we evaluated in a famous network simulation software scenario, analyzing a separate network and routing protocols in various experimental settings. [11].

PACKET DELIVERY RATIO

In the network, the distribution packet ratio is the ratio between a lot of packets received by the destination node, and the number of data packets sent by the source node in the network. The number of packets that it already sends is the ratio between the number of packets received by the network traffic source and network traffic sync. This proof of the rate of transport protocol in this form can measure the distribution of packet loss ratio and is the case, it separates the efficiency of health and ad hoc network routing protocols. Packets that deliver a high rate are very essential in any of the networks. A delivery ratio of node packets for network applications, that emerged from data packets for each protocol to provide uneven time in the network. And to the destination ratio, packets understand the distribution ratio of the number of Muslim data packets. The data that has been given to the destination node in the network level reveals the data.

$\sum$ Number of packet receive / $\sum$ Number of packet send

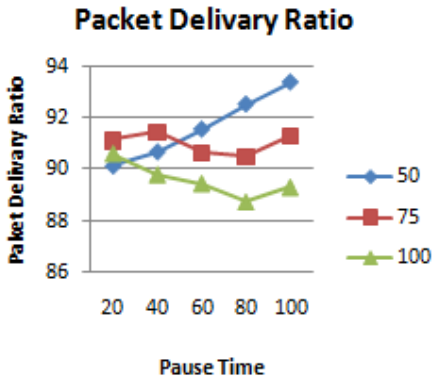

Fig. 1. Packet Delivery Ratio

Based on simulation results, the packet delivery ratio of network based on static vector nodes with hop count 50 and DSDV based network in different simulation time initially lower as 90 but with increase of simulation time it reach to 93, which is highest in simulation results. where as in scenario of node count 75 initially it is 91.1 which increment 91.4 and fluctuate in 90.6 and 90.5 and finally comes to 91.3 according to increase of simulation time of network. In node count 100 at 20 simulation time it provides 90.63 which decrease with simulation time increase and with highest simulation time 100 it increase with 89.32. According to simulation findings DSDV protocol provide less packet delivery ratio with more node count and more simulation time.

AVERAGE END-TO-END DELAY

The average end-to-end delay is the elapsed time when the packet is sent from the source node in the network or through the destination node required in the network. These include delays in the way to finds out, when the time is for data transfer, intermediate and delay in the queue. This is the average time it takes for a packet to travel from source to destination. It also includes delays in the process of sending packets from the sending end to the future by the discovery of network paths and rows. It will only be a successful receipt of the destination packet account.

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∑ (arrive time – send time) / ∑ Number of connections

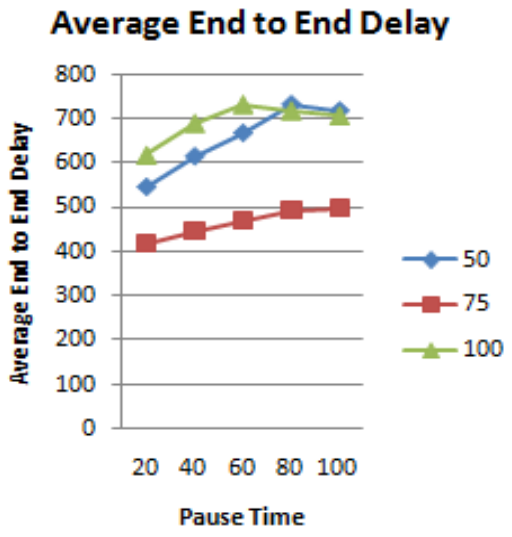

Fig.2. Average End to End Delay

Based on simulation results, the average end to end delay of network based on static vector nodes and DSDV based network in different simulation time initially at 50 nodes and 20 simulation time measure as 545.721 and with increase of simulation time it increase as 615, 668 and 733 and finally with 100 simulation time it reaches to 718. Whereas with node count 75 and simulation time 20 it is low as 418 which increase with increase of simulation time and reach to 498. With node count of 100 it provide 619 end to end delay with 20 simulation time and increase first with 731 and then decrease as 706. According to finding it concluded that with 100 node count it provide more end to end delay means this network perform well in less node count.

VII. CONCLUSION

It has been concluded that by different simulation time and different node count, and evaluation that the DSDV provide different performance in various scenario. According to simulation findings DSDV protocol provide less packet delivery ratio with more node count and more simulation time. Also it is concluded that with more node count DSDV provide more end to end delay means this network perform well in less node count and more simulation time.

VIII. FUTURE WORK

In the future, we want to obtain a more in-depth protocol allocated for mobile wireless route analysis to conduct a complex simulation of scale. Also try to promote some new feature in the protocol. We want to offer a new protocol, not only for different routing protocols, but for the greater areas of different key concepts in wireless networks and computer networks and communications.

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