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Review on Challenges in Multipath Routing with AODV Protocol for MANET

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Abstract: MANET is a standalone infrastructure for self-configuring networks and wirelessly connected mobile devices. One of the biggest challenges is guidance. the routing is a way of sending packets in the network . Routes in MANET differ from traditional network infrastructure because the contract serves not only as a terminal device but also as a router. Without any security infrastructure and ever-changing network topology, routing protocols are vulnerable to various attacks. the various improved to techniques are used to decrease the current recovery time with good working of the system. the optimized route will be provided in an existing routing protocol for efficient routing in Ad Hoc mobile networks.

Keyword: MANET, AODV, Routing Protocol

I. INTRODUCTION

A dedicated mobile network (often referred to as MANET) is one that consists of a set of mobile nodes that share a wireless channel without any central communication established by the central controller. Custom networks do not have fixed routers, all nodes are able to move and can be connected dynamically in an arbitrary way. Typically, these nodes act as both end systems and routers at the same time[2]

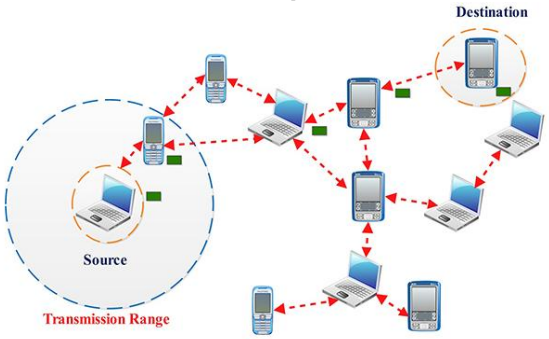

Fig1 Mobile Ad-hoc Network [2]

Characteristics of MANET

Infrastructure-less Network*:* MANET does not rely on any fixed infrastructure or centralized management. Each node runs in peer-to-peer mode, acting as a standalone router and generating independent data. Network management must be distributed through different nodes, making it difficult to detect and manage errors [1]

Multi-hop routing*:* There is no default router available, with each node acting as a router and forwarding packets from other to allow for the exchange of information between mobile hosts[1]

Optimize Bandwidth: Compared with a wired network, the number of documents is too small to connect to the wireless network. As a result, when an application claims more nodes join the network, congestion problems on the network will occur, resulting in higher network capacity with the best use of bandwidth coming from images [3]

Security: Wireless links mean more security risks, such as communicating with peers, sharing wireless media networks, and content that an attacker can access. The firewall must be considered in the wireless network for attack [4].

II LAYERS INVOLVES IN MANET APPLICATION LAYER

1. **Transport Layer**:-Authentication and securing end-to end communications through data encryption.[6]
2. **Link Layer**:-Protecting the wireless MAC protocol and providing link layer security support.[6]
3. **Physical Layer**: Providing signal jamming denial of service attacks.[6]

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III. CHALLENGES IN ROUTING PROTOCOL

Mane's security is another major concern. Due to the mobility and non-linearity of malicious nodes, the network can enter the network at any time. The security of the contract and the sending of data need to be considered [8].
Because of these issues, private networks are not suitable for general use of mobile devices, so access to the Internet is a major requirement. In these cases, wireless devices are typically connected to the wired infrastructure via access points (APs) to reduce wireless domain unreliability [9].

However, private networks show great potential when access to the Internet is not a prerequisite or not available for infrastructure, including disasters or military conditions, low-power wireless sensor networks or vehicles that only need to communicate with each other [10].

Routing in wireless sensor networks is always a matter of concern, mainly due to several factors, from unfriendly publishing conditions, repeatedly changing network topologies, network failures, resource constraints in each sensor node to designing routing protocols. [5] UDF protocol is used to provide the path to the intermediate node source. ODP, known as the on-demand algorithm, provides the path only when requested by the node, thus generating less traffic. Therefore, before implementing the bootstrapping route, many basic features need to be considered to affect the implementation of the routing protocol. [5]

A. **Ad Hoc Networking Issues**

In general, mobile networks are dynamically formed through a wireless mobile contract independent mobile contract system that does not require the use of existing network infrastructure or centralized management. The use of dynamic topology that free nodes free to move, any organization. This flexibility and comfort do not come at a price.[7]

Custom wireless networks inherit the traditional wireless and wireless network problems
• There is no absolute limit to wireless media and cannot easily be viewed outside of a site known to be unable to receive network
• Channel has no external signal shielding;[7]

IV LINK FAILURE RECOVERY TECHNIQUES

The connector path required to reduce submergence is fixed. The proposed system [11] is a UDF-based path discovery using the path recovery algorithm for fault detection, and the node is also selected for replacement with This node is replaced by the Network Topology Manager (NTM). In this system, link failures are based on low node energy, node monitoring and node blocking. Achieve less energy consumption using dynamic nodes with wireless sensors and network actors who are backing up fixed nodes - Improve outward performance-based routing approach by selecting the optimal route to improve routing. This will reduce the power consumption of each node. The downside is that it consumes more power to determine the contract's power. Therefore, local road repair [12], which defines the failure prediction failure method. The algorithm tends to reduce packet discard rate and end-to-end delay and maximize packet delivery. Focus on end-to-end latency, reducing packet and overhead guidance. The protocol makes use of the circular mechanism of sequence numbers in each path. You must calculate the shortest path to send data from the source to the destination. However, because of packet control, it is found that this path can cause overhead and congestion. The establishment of strong backbone efficiencies [13] to overcome the limitations of many existing protocols and to provide rapid recovery from link failures by creating alternative paths from point-of-failure to destinations that can be interchangeable in any type of environment Recovery mechanism. Storage and cost control on each node. Maintaining the path cache for each node through this proposed protocol is difficult. network is proposed in The news helps to broadcast the data. It is looking for signal strength, hop count, serial number, packet loss rate and productivity. Because need mutual authentication between mobile nodes, UDFs have been effectively enhanced.

IV CONCULSION

MANET soon became an alternative network infrastructure for infrastructure networks. In many applications it has been found that the limitations of processing power, memory, power consumption and bandwidth will soon be overcome by rapid technological improvements. However, the main concern is still network security. Therefore, he commented on the best instruction from MANET. This concept will provide the best guidance in the event of an error. It will provide the process of route analysis, some concepts of faulty nodes, and methods of handling attacks. And reviewed possible countermeasures for such attacks. The proposed work will improve the effectiveness of the system.

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