

# ENHANCED ROUTING TO PREVENT PACKET DROP IN NETWORKING

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## Abstract

The main aim of this project is to reduce the packet drop in larger network with a heavy traffic. Generally as to reach high performance communication in the network, electronic devices are used to forward multimedia messages from one place to another place. Whenever unaccountable messages are passing from one node to another node there are heavy collision and congestion in the network. On Such conditions electronic devices which are kept between nodes like router, Switches, Bridges, gateways are working for a long time, which causes heat dissipation. Because of this heat dissipation packet drop occurs. To minimize the packet drop OSPF v3 protocol is used.

## 1. INTRODUCTION

The main aim of the project is to provide an efficient and the shortest path using some optimized algorithms in the heavy traffic networks. By using this algorithms the packet drop can be reduced for some extent. While sending the large data through the electronic devices like router, hubs, and some intermediate nodes some heat dissipation occurs due to this the efficiency of routers is reduced and life span of the routers also reduced to reduce the loss some Protocols are used like AODV, OSPF v3 using IPV6, EIGRP which is the most preferably used network protocol.

## 2. LITERATURE SURVEY

In MANETs node's battery energy and stability of the links are often affecting the communication activities in network. These two factors are one of the main reasons which are responsible for the loss of data packets and occurrence of congestion issue that networks are facing toady. In order to overcome these issues we are proposing an approach known as Efficient and Stable Multipath Routing in MANETs with Congestion Aware. This approach is an extension work to our previous work where bandwidth and delay are considered during the routing. Here in this approach network estimates the residual energy and stability of the links in the network. While estimating the residual energy it also considers the receiving energy and transmitting energy of the node. Then stability of the link LET is estimated, this LET is

obtained using motion parameters i.e. velocity, direction of the nodes. Based on these parameters the network selects the path to transmit the data packets between the nodes.

### 3. PROPOSE WORK

OSPF version -3 using IPV6 which is a routing protocol for the IP networks. It uses the link state routing algorithm. It shares topology information to the nearest neighbors it first sends hello packets to discover neighbors. It provides equal cost multipath routing. It is more suitable for serving the larger internetworks. It can recalculate the routes in short amount of time when the network topology changes. As it supports for ipv6 it is used for larger networks for sending data within a less time. Buffer is the part of Router unit. Moving packets are entering into buffer unit to forward the packets to the particular routes. Here queuing delay is the single biggest cause of uncertainty in today's Internet as buffers creates queuing delay and delay variance, which dissipates heat energy during this queuing delay because of heavy Load. It cause packet loss, and when they undergo this heat degradation it affects throughput of entire network. Multipath routing is the routing technique of using multiple alternative paths through a network, which can yield a variety of benefits such as fault tolerance, increased bandwidth, or improved security. The multiple paths computed might be overlapped.

### 4. MODULES DESCRIPTION

**BUFFER MODULE:** Buffer is the part of Router unit. Moving packets are entering into buffer unit to forward the packets to the particular routes. Here queuing delay is the single biggest cause of uncertainty in today's Internet as buffers creates queuing delay and delay variance, which dissipates heat energy during this queuing delay because of heavy Load. It cause packet drop or data loss which leads to the loss of entire network and heavy damage occurs to entire system. To reduce this virtual buffer spaces are created and gap of these buffer spaces are reduced. So that only a certain amount of data which a router can manage is only sends through the routers. Thus the data loss can be reduced to some extent.

### MULTIPATH ROUTING

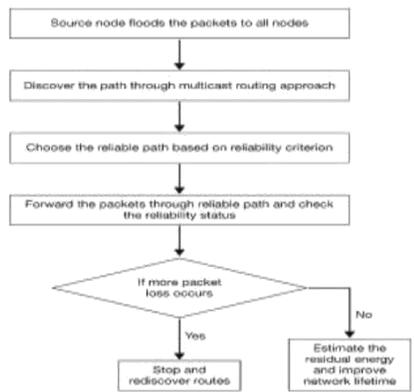
Multipath routing is the routing technique of using multiple alternative paths through a network, which can yield a variety of benefits such as fault tolerance, increased bandwidth, or improved security. The multiple paths computed might be overlapped. This provides the multiple routes to send the data packets to the destination. But it can't send the data in a shortest path. The data that we send will be reached to the destination but not in the optimized path. It cannot recalculate the path if the node breaks in the middle of the path. It is not suitable for sending the data for larger distances because of the node break issue.

**OSPF V3 using IPV6:** It is a routing protocol for the IP networks. It uses the link state routing algorithm. It shares topology information to the nearest neighbors it first sends hello packets to discover neighbors. It provides equal cost multipath routing. It is more suitable for serving the larger internetworks. It can recalculate the routes in short amount of time when the network topology changes. As it supports for ipv6 it is used for larger networks for sending data within a less time. This is also used for connecting multiple

areas. It can easily calculates the shortest path by using node count and by finding the stability of the node. It is one of the most preferable network protocol because it don't provide any hop limit so data can be transferred for long distances.

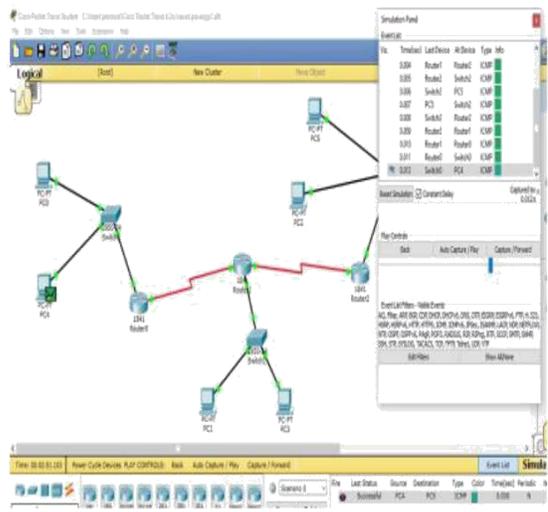
**AODV PROTOCOL:** It is a distance vector routing protocol which is designed for mobile networks and wireless ADHOC networks. It discovers routes when necessary. It supports both unicast and multicast routes. It uses flooding of control packets which are used for discovering routes. It is more efficient when the rate of data transmission is low. It uses multipath routing to send the data. A large data is simplified to small packets and sends through multiple routes.

### ARCHITECTURE DIAGRAM



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## Future Work

All aspects of protocol operation are entirely on-demand, Nodes ignore all topology changes not affecting them, Overhead scales automatically as movement increases, Zero overhead when stationary and found routes already, Also can support unidirectional links and asymmetric routes, Extensive implementation and demonstration with real workloads. Ad hoc networks have to face several challenges, such as dynamic topology, real-time communication, resource constraint, bandwidth management and packet broadcast overhead. These issues complicate the network to design the routing protocols. To provide data transfer with no data drop and packet loss functioning and to provide a high reliability and efficient data transfer in the network traffic.

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