

# Congestion Control and Routing Optimization by using On Demand Routing protocol of AODV

Batti. Tulasidasu, Koppula. Vijaya Kumar

**Abstract:** Now a days the main problem is routing optimization and congestion control of distribution. The Routing optimization has received a major role recently. Most of the existing methods follow second order approach of back Pressure algorithm(BPA). which results of performance shows in poor delay and slow convergence, To overcome slow convergence, poor delay and to achieve perfect routing optimization by using On Demand routing protocol that offers optimality of utility, fastly calculation of path with low delay. The main contribution of the paper is to overcome the drawbacks in the second order distributed approach of AODV, they are:

- 1) On-demand routing protocol to decrease time delay.
- 2) Only the efficient or needed nodes are covered avoiding unnecessary nodes.
- 3) Improper optimization is avoided in this method.

**Index Terms**—On Demand Routing Protocol, AODV, delay Performance, second order distribution Approach.

## I. INTRODUCTION

The recent Drawbacks of networks are one of the joint congestion control means particular node having collision that node called as congestion node another one is route optimization .In this network every node can acts as a router so The date, however, most of the existing methods follow a key concept is called as back-pressure algorithm.Back pressure algorithm is one of the type of On-Demand-Routing Protocol, even though having many relevant features, of the the back pressure algorithm(BPA) is based on results due to the second-order sub-gradient nature in unhurried confluences and less delay of performance. To conquer of obstructions. In this paper, at first must make an attempt to develop a AODV of second-order joint congestion control and findout the shortest route from source to destination of framework that offers utilization of optimality, fixed path, fast confluences, and reduce the delay. In this paper our contributions consists of three-modules: i) a second-order joint congestion control of AODV and routing background based on a interior-point of primal-dual Approach. ii) To establish Shortest path in limited time and stability for path in network.iii) illustrate the implementation of proposed AODV of distributed approach in second order method a.New applications and technologies are used in manets , now a days communication is first challenges wireless networks of work more efficiently. while there exists a large network having optimization of path by using dynamic joint congestion

control and routing protocol in wired or wireless networks mostly this methos followed by one key idea that method is called as back-pressure algorithm. which traces the optimization of path during passing of networks from soure to destination[6]. The AODV algorithm of back-pressure is reputation mostly due to 1) shortest network of the througuput, 2)the back-preasure algorithm shows delays of layes,and3) a distributed forceful packet- length variance based on routing optimality that fixed all type of packets are inthe network back pressure algorithm is one of the type of on demand routing protocol ,this routing protocol of main aim is to findout the optimization of path and reduce delay of passing of packets in the network.In this manets the back pressure algoritim is not coverd of fundamentals.

The AODV Algorithm of BPA based on congestion control and sub-gradient method of the dual disintegration framework [1], [3], the length of packets and dual variables are updates, correspond to sub-gradient of directions. Its very helpful for awareness, the unified techniques are originated independently by using theory of optimization and control.

## II. EXISTING SYSTEM

In that Existing system it can use the second Order Approach of On Demand Routing Protocol in this approach time delay performance is good but comparing second order delay is little bit lesser than of Second order approach Adhoc on Demand Routing Protocol.Personal have a privacy always been a foremost worry in this country. In current years,so many people are depending on Internet, all are providing more Privacy due to issues of confidentiality, The First Arder Apporach is mainly used for avoid the congestion control and traffic reduce also but here the main drawback is slow convergation of delay of network and the number of iterations will be occurred in passin of packets between network.

## III. SECURITY ISSUES

Even though enterprises have maintain a so many separated data about us obtainable in public network, they don't have any enough security structures in region to keep that evidence. Forexample,simply Benz Motor deposit organization took to inform 17,000 of the customers of their two man or lady statistics that facts possibly Social Security number address,account extensive range and payment of information two have been accessed thru 1/3 birthday birthday party who broke into a database be in the proper location to the Explain employer of savings reporterThis incidence clarified that businesses are willing to expose and share your personal information, the facts is no longer taken accurate.

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\* Correspondence Author (s)

**Batti. Tulasidasu**, Assistant. Professor, Department of CSE, CMR College of Engineering & Technology, Telangana, India

**Koppula. Vijaya Kumar**, Professor & Head, Department of CSE, CMR College of Engineering & Technology, Telangana, India

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A lot of personal data is available, the main real problem is a identity of theft .Data obtain from database intended to be used for purpose of marketing else some other purposes of ethical, wrong businesses people may be used the data obtained from mining to take advantage of third party people are separated against from certain group of people. In process, techniques of data mining does not gives a pure information accurate.thus mistakes are implemented by using Adhoc on Demand Routing Protocol of back pressure algorithm.

#### IV. FEASIBILITY STUDY

Observation of exploration of project is a first feasibility, the system possibilities will be used to the association. The main aim is a study of feasibility is a initial Technical testing, and feasibility of Economical and Operational for addition of old running system of disadvantages and new proposed modules in the current system. All systems have a feasible, if they are never-ending time and unrestricted resources, in the feasibility of the preliminary inquiry of study portion is one of the first aspect. technically developed by the system and that will be used, if good asset for the association must be installed In the feasibility of economical new systems derived ultimate benefits against evaluted system,created development cost. benefits of Financial must be exceed or equal to the costs. It does not need any adding together software or hardware. the existing resources and technologies developed by the system for this interface and available at NIC, when a test the operational feasibility of a project it shows important problems includes the following: -

- Is there sufficient maintenance of the management from the users
- When a system will be developed and implemented it will be used and worked properly
- The user having any resistance it will be challenged for the possible application benefits

The system was focused to be in problems with the above-mention dissues. Before hand, the administratation of conclusion gives user requirements and issues. So there is no doubt from the users authentication that can hide the possible application benefits of data.so that The well-planned design for ensure the utilization of shortest path of the node. performance of status is improved by using resources of nodes . The current system was developed by feasible of technically. Audit workflow is a web based user interface at NIC-CSD. Thus it provides to the users for access. creation of database is used to maintain and establish a workflow among different entities in order to smooth the progress of all concerned nodes in their various capacities and roles. the users of Permissions was granted based on the specified roles. as a result, it provides the the accuracy, reliability and security of network. The requirements of hardware and software for the implementation of the project are available as free as open source.

#### Switching

In the Switching main advantage is switching this is mainly used for Data transmission by the other traffic in the conductive network. The traditionally in telecommunications systems are mainly using of switching method. The meaning of the Conducted switching is that allocation of a limited

bandwidth from the full throughput of the communication medium and the bandwidth will be allocated completely. The allocated bandwidth is the main advantage of data exchange for the time taking of path set, which is the allocation of bandwidth from convinced place. Generally, this type of throughput utilizing the wired networks and interchanging the required data from different stages, counting connection formation, of the data, closing of the linking.In the real world, this type of a switching is one type of the OSI protocol stack layer , this is called as data link layer. During this text kind of a switching is viewed as layer 2 switching. Actually, layer 2 switching can simply be well-thought-out bridging and in this logic, layer 3.

#### V. PROPOSED SYSTEM

Developing a Adhoc on Demand Vector Roting Protocol of second Order BPA of routing algorithm in distributed approach in very challenging and the Result using first order approach as inadequate.Firstly we can using thebackpressure algorithm this algorithm give the effective utilization of bandwidth and to reduce the delay of network of packets.The main goal of the algorithm to overcome the congestion control passing of packets in dynamic network.The main challenges is one of the work is static issue means every node can maintain the unnessery data of previous and next node,the first order approach can allocate the network as statically this is the main drawback of congestion control of first order approach.

the first order approach of data information still missing in network,but we are using second order approach (Reactive Routing Protocol) can gives the exact optimization of path and no information will be missing in the network.The second order approach can gives the utilization of optimality of network and fixed length of network stability.Information of data is very complicate the computational methods and develop the new theoretical algorithms in analysis of performance.The developing of second order congestion control algorithm in distributed fashion is still gives the good results compare with first order approach.similarly the second order approach of optimization of algorithm have to face the challenging are to finout the routing optimization and reduce the delay of passing of network.

#### Advantages:

- Utilization of bandwidth is increasing.
- Reduce the delay time.
- Updating of path from source to destination dynamically.
- Transmissin of Results is very fastly.
- Increasing of throughput.
- Number of iterations are reduced.

**Construction of network methods:**

We consider a network of communication in timeslots. this time slots means the passing of packets used in timeslot units. Reconstruction of communication network by using directed graph in this graph every node will be connected to the neighbouring nodes with respectively. Suppose the network will be connected and using end-end sessions in network, Each and every session has origin node and end node. The source node can acts as a Receiver. The network has congestion control means to reduce the traffic in the network by using transport layer and the source node can continuously sending the data from destination node. Similarly the network layer can using the time slots and the congestion control of transport layer determines the of data of quantity from source to destination node.

**Routing:**

The capacity of network is fixed that network connected to neighbouring nodes that network may be in wireless or wired network. with original challenging and fixed transmission power. We define the network consisting large number of nodes as well as having of large congestion. This congestion depend upon the average time slots of rates.

**Queue Stability:**

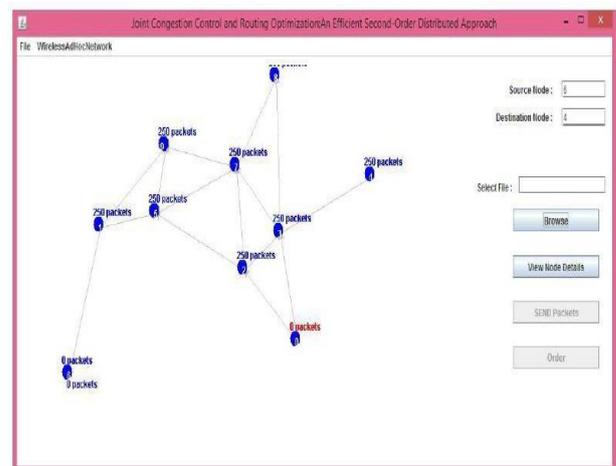
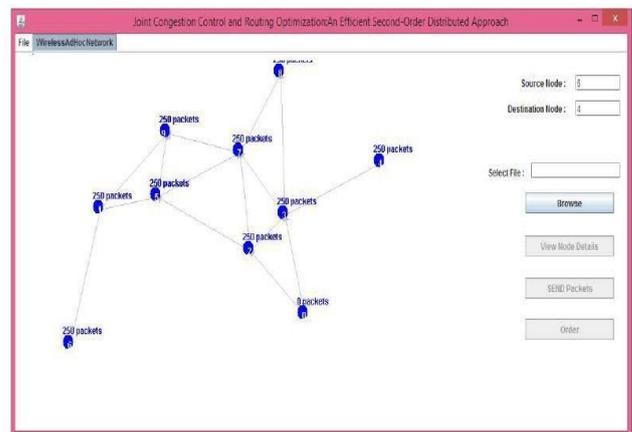
We assume each node of network can maintain the fixed length of stability in each session. Since the data will be forward from the source to destination, then the data will be reahed in destination in this situation the stability of network is very important. suppose the congestion will be occurred in network then immidiatly cont broke the network stability. This network stability totally depends upon the second order approach of congestion control algorithm. In that network cant break then we can say this is stability of network. Several second order approach is based on the back pressure algorithm. This idea was proposed the algorithm is called as second order congestion this is the one of the type of Reactive routing protocol. The congestion control of second order approach the main challenge is queue length. Suppose we can using first order approach this approach can reduce the length of Network of passing packets (It can takes the less time for forwarding.) Adhoc on Demand Routing protocol of second-order congestion control and forwarding the data of strategy is highly difficult and their results of data remains insufficient, unclear how one can utilize the insights from existing second-order of BPA network optimization algorithms to guide the design of an routing strategy and optimal dynamic congestion control.

**Pseudo code:**

1. Source node received the data. Data divides into packets.
2. Data packets maintained in source node as a queue data
3. Source node have some neighbor nodes
4. From source node to neighbor nodes there is a link (example: 1->2, 1->3 : transmission rate, allocation of packets capacity based on resources dynamic (maximum updating limit).
5. Updating link capacity and transmission rate(speed)
6. Two links are not handling the total queue data.
7. We can transfer the data, one iteration is complete in first time slot.

To establish second order approach of congestion control and frame work depends upon the forwarding of multiple nodes, with dynamic distributed approach as well as the distributed of data in network the results will be improved in second order approach compare with first order approach. The second order approach is followed by first order approach but the reduce delay of passing of packets are immidiatly removed in network, the traffic will be reduced in collesion node. that is called as congestion control. In both first and second order approach can used for optimization of path in network. approach of a primal dual interior point of simple step-size control strategy is totally holded by network. such that in the perception of a practice of execution is a well suited for the consequential method, today operations research is a active research field of itself. Then establish the queue- stability and utility-optimality of the proposed adhoc on Demand Routing Protocol of second order approach. results of analytical obviously guide to a of utilization of optimality network and length of transaction queue.

**VI. RESULTS:**



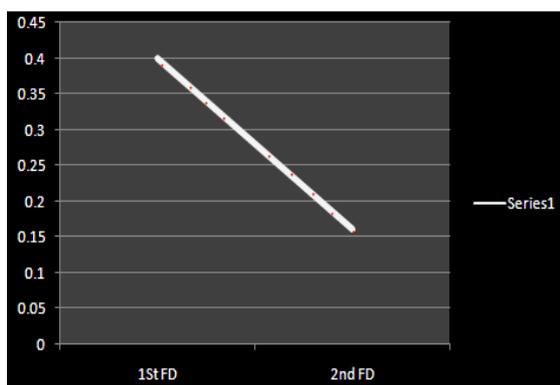
Node Name	Sub Nodes	commodity	transmission
NODE-0	2,3	250 packets	250
NODE-1	5,6,9	250 packets	250
NODE-2	0,3,5,7	250 packets	250
NODE-3	0,2,4,7,8	250 packets	250
NODE-4	3	250 packets	250
NODE-5	1,2,7,9	250 packets	250
NODE-6	1	250 packets	250
NODE-7	2,3,5,8,9	250 packets	250
NODE-8	3,7	250 packets	250
NODE-9	1,5,7	250 packets	250

**An Efficient First-Order Distributed Approach**

Junction	Capacity	Time	Timelast	Transmission
0	0	0 m. 2 s	0	0
1	0	0 m. 2 s	0	0
2	0	0 m. 4 s	0	0
3	0	0 m. 3 s	0	0
4	0	0 m. 4 s	0	0

**An Efficient Second-Order Distributed Approach**

Junction	Capacity	Time	Timelast	Transmission
0	0	0 m. 38 s	0	0
1	0	0 m. 34 s	0	0
2	0	0 m. 48 s	0	0
3	0	1 m. 13 s	4	0
4	0	0 m. 16 s	0	0



integrity with shortest path between source and destination Together, substance for the optimization theory and second-order approach of AODV that offers performance of convergence is very high. BPA second order approach for network systems is an important and yet under-explored area. In the Future research such as wireless communication with cloud computing resource allocations and stochastic channel models.

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