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Comparative Study of AOMDV and AODV Routing based on Load Analysis in MANET

[1]Sonika Thapak & [2]Dr. Pradeep Chouksey

[1]*Research Scholar,,Department of Computer Science, Mewar University, Rajasthan (India)*
[2]*Department of Computer Science, TIT Bhopal (India)*

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ABSTRACT

Routing is quite tough in Mobile Ad hoc Network (MANET) due to changing the role of mobile nodes. The topology of the system is often modifications and totally dynamic. In this particular paper we proposed a routing overall performance of AOMDV and AODV protocols in MANET. The AODV (Ad hoc On demand Distance Vector) process will be the unipath routing protocol and developing established the path in on demand way. The multipath protocol has an ability to balance the ton on the system properly. The AOMDV (Ad hoc On demand Multipath Distance Vector) could be the multipath routing protocol and established the far more than 2 routes as the back up route or maybe alternate routes for data transmission and seeing in MANET. The alternative route profile is certainly gets better the routing performance i.e. measures in this analysis. The functionality of both protocols are assessed through maximum load management, typical load handling ability of nodes and also routing overall performance is dependent on the package delivery fraction, end-to-end delay and throughput. The functionality of AOMDV protocol is much better compared to the unipth AODV as well as tackle the load through distributed to alternate paths. The AOMDV offers the much better routing performance as compare to AODV routing protocol.

1. Introduction

A mobile ad hoc network [one] is a set of electronic information terminals equipped with wireless transceivers which can speak with each other without needing any fixed network infrastructure. Communication is maintained through the transmission of information packets over the same wireless Channel.

The lack of any fixed infrastructure, like several base stations, makes ad hoc networks radically different from many other wireless LANs. Whereas Communication from a mobile terminal within an infrastructure system, like a cellular network, is constantly maintained with a fixed base station, a mobile terminal (node) within an ad hoc system is able to talk directly with another node that's placed within its radio transmission range. To be able to transmit to a node that's placed outside its radio range, information packets are relayed over a sequence of intermediate nodes working with a store-and-forward —multi hop transmission principle. All nodes within an ad hoc system have to relay packets on behalf of many other nodes. Thus, a mobile ad hoc system is often also known as a multi hop wireless network. The style of Ad hoc system faces obstacles that are a lot of . The first is that most nodes within an ad hoc system, like the supply nodes, the corresponding destinations, and the routing nodes forwarding traffic between them, might be mobile. As the wireless transmission selection is limited, the wireless link between some neighboring nodes breaks the moment they go from range.

An additional reason that makes the style of ad hoc networks complicated is the lack of centralized control. All marketing functions, like identifying the network topology, numerous accesses, along with routing of information over the most suitable multi hop paths, have to be done in a distributed manner. These activities are especially complicated as a result of the limited communication bandwidth obtainable in the wireless channel.

The figure one shows the instance of MANET in which sender S transmits information to receiver R through intermediate nodes. This's primarily as a result of the mobility of the nodes

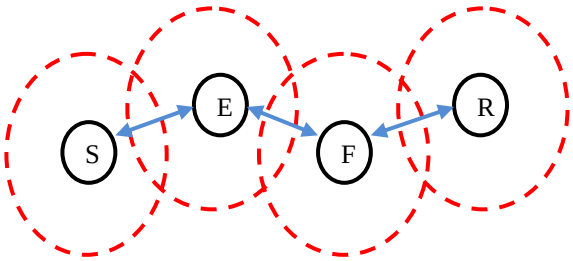

Figure1 Example of MANET

These problems are resolved by distinct layers. The bodily level should handle the road loss, fading, and multi user interference to keep healthy communication links between peers. The information link layer (DLL) should make the bodily link reliable and solve contention among unsynchronized users transmitting packets over a shared channel. The second process is done through the moderate access control (MAC) sub level in the DLL. The network level should observe changes in the system topology and properly figure out the very best course to the preferred location. The transport layer should equal the delay and also packet loss characteristics unique to such a powerful wireless network.

A. Important attributes of a MANET Characteristics:

Dynamic Topologies: Nodes are cost-free to go arbitrarily with various speeds; thus,the network topology may possibly alter randomly & at unpredictable times. Energy-constrained Operation Some or perhaps most of the nodes within an ad hoc system might rely on batteries or any other exhaustible ways for the power of theirs. For these nodes, the most crucial system design optimization criteria might be energy conservation.

Limited Bandwidth: Wireless links consistently have significantly reduced capacity than infra structured networks. Additionally, the recognized throughput of wireless communications - after accounting for all the consequences of several access, fading, noise, as well interference circumstances, etc., is typically a lot less compared to a radio's maximum transmission rate

Security Threats: Mobile wireless networks are commonly much more susceptible to physical security risks than fixed cable nets. The increased chance of eavesdropping, spoofing, then minimization of denial of service type attacks must be thoroughly considered.

1.1.1 Advantages of MANET

The following are the advantages of MANETs:

- They provide access to information and services regardless of geographic position.
- These networks can be set up at any place and time.

1.1.2 Disadvantages of MANET

Some of the disadvantages of MANETs are as follows:

- Limited resources and physical security.
- Intrinsic mutual trust vulnerable to attacks.
- Lack of authorization facilities.
- Volatile network topology makes it hard to detect malicious nodes.
- Security protocols for wired networks cannot work for ad hoc networks,

2. Applications of ad hoc networks

Some of the typical applications include of MANET are:

A. Military Applications

Sensor networks are able to supply range of services to military and air force as info collection, battlefield surveillance, intrusion detection and also hit detection. In this particular area of application sensor networks have rather an edge over other networks because enemy attacks are able to harm or even eliminate several of the nodes but nodes failure in MANET does not impact the entire community. Possible applications of MANET in military are:

1) Enemy Tracking and focus on classification: Objects going with significant metallic information is often detected using specially created sensors. So enemies may be monitored and civilians are ignored. This system specially aids in detecting armed vehicles and soldiers.

B. Battlefield surveillance:

Critical areas and also borders might be closely monitored employing sensor networks to get info about any enemy activity in that place. This supplies fast gathering of info offers time for fast response. Battlefield damage assessment: Sensor networks will be deployed after the fight or perhaps attacks to collect info of damage assessment.

C. Infrastructure:

MANET is usually deployed in infrastructure security. Critical buildings, monuments, stadiums could be shielded from terrorist attacks utilizing sensor networks. Sensors could alarm the person about possible danger aided by the exact same mechanism as enemy detection. Any person with substantial metal content could be detected as a likely risk and further actions could be considered by the people that are dealing with the security of the event. Even sensor nodes could be used in vehicles that give advance tracking mechanism for vehicles and monitoring

D. Traffic Control:

Sensor networks have been utilized for automobile traffic monitoring and management for quite some time. Most website traffic intersections have either overhead or even buried sensors to identify cars and also control traffic lights. In addition, video cameras are generally used-to observe road segments with traffic that is heavy, with the clip sent to human operators at main locations. This particular network type will be the subset of MANET called (Vehicular Ad hoc Network) VANET.

(I)Classification Of Routing Protocols

Classification of routing protocols in mobile ad hoc network can be done in many ways; the routing protocols can be categorized as Proactive (Table Driven), Reactive (on-demand) and Hybrid depending on the network structure.

A. Proactive routing Protocols

Proactive protocols perform routing operations between all source destination pairs periodically, regardless of the necessity of such routes. These protocols try to keep shortest path routes by utilizing periodically updated views of the system topology. These're usually maintained in routing tables in every node and kept up to date with the acquisition of info that is brand new . Proactive protocols hold the benefit of providing reduced latency in the possibility and information delivery of supporting apps which have quality-of-service constraints. The primary disadvantage of theirs is because of the food wastage of bandwidth in transmitting update packets periodically no matter if they're not essential, like when there're no link breakages or even when just a couple of routes are necessary Types of Proactive MANET Protocols include: Optimized Link State Routing (OLSR), Fish eye State Routing (FSR), Destination Sequenced Distance Vector (DSDV) etc.

B. Reactive Routing Protocols

Reactive protocols are created to lessen routing overhead. Rather than monitoring the changes within the system topology to constantly keep shortest path routes to other destinations, these protocols determine routes only when needed. Usually, these protocols do a route discovery functioning between the cause and also the preferred location when the cause must send out a data package as well as the course on the spot isn't recognized. So long as a path is living, reactive routing protocols just perform route maintenance activities and resort to an alternative course discovery just when the current one

breaks. The benefit of this on demand operation is the fact that it typically has a significantly lower average routing overhead in comparison to proactive protocols. Nevertheless, it's the downside that the route discovery may entail flooding the whole community with query packets. Flooding is careless, that may be required often in case of high mobility or perhaps when there're a lot of energetic source destination pairs. Moreover, path discovery enhances the latency in package delivery as the cause must wait till the path is set before it is able to transmit. Despite these disadvantages, on demand protocols receive comparatively a bit more interest than proactive routing protocols, as the bandwidth advantage permits them to be much more scalable.

On-demand (reactive) routing provides a significant and interesting departure from the conventional proactive approach. Main idea in on demand routing is finding and maintains just needed routes. Recall that proactive routing protocols retain most routes with no regard to the best use of theirs. The apparent advantage with discovering routes on demand is avoiding incurring the expense of maintaining routes which aren't used. This method is appealing if the network traffic is directed, burst, and sporadic mostly toward a tiny subset of nodes. Nevertheless, since routes are produced when the necessity arises, information packets experience queuing waiting times at the cause as the path has been discovered at session initiation and also when course is now being repaired later on following a disappointment. Another, not apparent consequence of on demand routing is the fact that routes may be suboptimal, as time moves along since with a genuine on-demand protocol a path is needed until it fails. The various kinds of On Demand driven protocols are Ad hoc On Demand Distance Vector (AODV), Ad hoc On demand Multipath Distance Vector Routing (AOMDV). Hybrid protocols seek to mix the Reactive and proactive approaches. A good example of the process is the Zone Routing Protocol (ZRP).

(II) Ad Hoc on Demand Distance Vector (AODV)

The ad hoc on demand distance vector (AODV) routing process is an on demand routing protocol; all routes are found only when necessary, plus are maintained just so long as they're being utilized. Routes are realized through a path discovery cycle, by which the network nodes are queried in search of a course on the location node. When a node with a course on the spot is discovered, that path is reported to the cause node which requested the route the next sections explain the functions of AODV that permit it to explore and also keep loop clear route.

(III) Ad Hoc On-Demand Multipath Distance Vector Routing (AOMDV)

Ad-hoc On demand Multipath Distance Vector Routing (AOMDV) [two] process is an extension on the AODV protocol for computing multiple loop free and also link disjoint paths [three]. The routing entries for each spot carry a summary of the next hops together with the corresponding hop counts. All the following hops have exactly the same sequence number. This aids in keeping an eye on a route. For each spot, a node keeps the advertised hop count, that is described as the highest hop matter for each one of the paths, which can be used for transmitting route advertisements of the location. Each duplicate route advertisement obtained by a node defines another path to the location. Loop freedom is sure for any node by accepting alternative paths to location in case it's a much less hop matter than the promoted hop matter for that location. Because the optimum hop count is utilized, the advertised hop count thus doesn't change for similar sequence number [three]. When a route advertisement is gained for a spot with a much better sequence number, the next hop list and also the promoted hop count are reinitialized. AOMDV enables you to discover link-disjoint or node-disjoint routes. In order to look for node disjoint routes, each node doesn't instantly reject duplicate RREQs. Each RREQs arriving via an alternative neighbor of the resource describes a node disjoint path. This's because nodes can't be broadcast duplicate RREQs, so every 2 RREQs turning up at an intermediate node via a completely different neighbor of the cause couldn't have traversed the identical node. In an effort to be several link disjoint routes, the destination replies to duplicate RREQs, the spot mainly replies to RREQs arriving via special neighbors. After the very first hop, the RREPs stick to the reverse paths, that are node disjoint and therefore link disjoint. The trajectories of every RREP may intersect at an intermediate node, but each uses a unique reverse road to the source to guarantee link disjointness [three]. The benefit of utilizing AOMDV is it allows for intermediate nodes to reply to RREQs, while still selecting disjoint paths.

3. Related Work

In this section the previous work that has done in this field is discussed.

Manveen Singh Chadha, Rambir Joon, Sandeep[1] Simulation and Comparison of AODV, AOMDV and DSR Routing Protocols in MANETs In this particular work an effort is created comparing the functionality of 3 visible on demand reactive routing protocols for MANETs: Ad hoc On Demand Distance Vector (AODV), Dynamic Source Routing (DSR) protocols and Ad hoc On demand Multipath Distance Vector Routing (AOMDV). AODV and DSR are reactive gateway discovery algorithms wherein a mobile device of MANET connects by gateway just when it's required. AOMDV was created largely for extremely dynamic ad hoc networks exactly where link issues and also route breaks happen frequently. It maintains routes for destinations in interaction that is energetic and also requires sequence phone numbers to identify the freshness of routing info to avoid routing loops. It's a timer based process and also offers a means for mobile nodes to react to link breaks plus topology changes.

Pooja Dahiya, Gunjan Madan, Reema Gupta [6] Performance Evaluation Of Aodv And Aomdv On The Basis Of Throughput in this particular title we talk about There are presently 2 variants of mobile wireless networks infrastructured and infrastructure less networks. The infra structured networks, likewise known as Cellular network, have repaired and also wired gateways. They've fixed base facilities that are linked to various other base stations through wires. The alternative network type, infrastructure less community, is viewed as Mobile Ad Network (MANET). These networks lack fixed routers.

Neha Gupta, Dr. Harish Chaudhary, Umang Garg [7]Simulation Of Aomdv and Aodv Using Scmac & Proposed Solution In order to Improve Throughput In Manet In this particular title we additionally proposed a multichannel MAC protocol for MANET to enhance throughput of n/w. The IEEE 802.11 standard provides for using several stations offered at the bodily level, but its MAC protocol was created just for one channel. An individual channel MAC protocol doesn't work effectively in a multi channel atmosphere due to multichannel hidden terminal problem.Our proposed protocol enable host to use several routes, thus improving n/w throughput. We've compare this multichannel protocol with one-time channel and proved it more effective regarding throughput than individual channel.

Mina Vajed Khiavi, Shahram Jamali [8] Performance Comparison of AOMDV and AODV Routing Protocols in Mobile Ad Hoc Networks In this particular title we compare AOMDV and AODV routing protocols for MANETs. The AODV is a unipath routing protocol and AOMDV is a multipath version of AODV. We analyses these routing protocols by comprehensive simulations in ns 2 simulator and also show that just how number of nodes, pause time and traffic rate affect the overall performance of theirs. Performance of AOMDV and AODV is evaluated based on Packet Delivery Ratio, Network Life Time, System Life Time and End-to-End Delay.

Ramprasad Kumawat, Vinay Somani, [9] Comparative Study of On demand Routing Protocols for Mobile Ad hoc Network This title investigates all these routing protocols corresponding to package delivery fraction (pdf), throughput, normalized routing end and load to end delay. The ns 2 simulation results showed AODV has always low routing load when compared with AOMDV in equally dynamic and static community for every pair of connections. AOMDV provided much better results at higher pause time but worst in case of end to end delay. We've in addition noticed that, DSR done very well in regards to end to end delay in equally dynamic and static networks.

P. Jammulaiah, Dr.P. Chenna Reddy[10] Simulation and Comparison of AOMDV, DSR and AODV in Manets In this particular title 3 routing protocols AODV (Ad hoc on Demand Distance Vector), AOMDV (Ad hoc on Demand Multipath Distance Vector) and DSR (Dynamic source Routing Protocol) are as opposed. The functionality of 3 routing protocols is examined in terms of the Packet Delivery Fraction, Average End-to-End Delay, Routing overhead, Route Discovery Frequency, and also Throughput. NS2 simulator is utilized for critical evaluation and comparison of AOMDV is carried out to find its demerits and merits.

Rajeswari. K, Vimala. S[11] Performance analysis of AODV, GPSR, AOMDV, and APU in MANETS The primary objective of MANETs would be to style of dynamic routing protocols with performance that is great and also less overhead. With the increasing interest in GPS and, geographic routing protocols have become an appealing option to be used in mobile ad hoc networks. The interest of Mobile ad hoc networks is increased because of multi hop infrastructure less transmission. In many existing routing protocols as AODV, AOMDV, APU and GPSR are vulnerable to node mobility particularly for large scale networks. In this particular name, we compare above mentioned routing protocols and evaluate the suitable algorithm for optimum power usage, much less huge packet and packet delay delivery fraction. The performance differentials are examined using NS 2 network simulator.

Rahul Deshmukh, Jitendra Rai [12]Performance Based Comparativeanalysis of AOMDV and AODV Protocols Under Energy Constrain This name is an effort is created comparing the functionality of AODV because of its variation of Multipath version AOMDV. The comparison was performed under 2 protocols namely TCP. and UDP The resources for the simulation are NS2 that is the primary simulator, NAM (Network Animator) and Trace graph that can be used for cooking the charts from the trace data. The results provided in this specific dissertation work clearly indicate that the functionality of AOMDV is much better compared to AODV with respect to throughput and energy usage.

R.Balakrishna, U.Rajeswar Rao, N.Geethanjali N[13] Performance problems on AOMDV and AODV for MANETS In this particular name, we evaluate and measure the functionality of 2 forms of On demand routing protocols Ad hoc On demand Distance Vector (AODV) routing process, that is uni path and Ad hoc On demand Multi path Distance Vector (AOMDV) routing protocol. We remember that on evaluating the functionality of AOMDV and AODV, AOMDV incurs even more routing overhead and packet lag time than AODV though it'd a much better effectiveness with regards to quantity of packets dropped and package delivery.

Bharti Kukreja, Sanjeev Kambhra[14] Performance Comparison of Routing Protocols in MANET In this particular title an effort is created comparing the functionality of 2 major on demand reactive routing protocols for MANETs that's Ad hoc On Demand Distance Vector (AODV) and Ad hoc On demand Multipath Distance Vector Routing (AOMDV). AODV is reactive gateway discovery algorithm wherein a mobile device of MANET becomes linked to gateway just when it's required. AOMDV was created mostly for extremely powerful ad hoc networks exactly where link fails and route breaks happen frequently. It maintains routes for destinations and also uses sequence phone numbers to identify the freshness of routing info to avoid through the routing loops. The performance metrics are examined by varying simulation time.

Brahm Prakash Dahiya[15] Performance Analysis and Evaluation of AOMDV and AODV in MANET in this particular title the writer discus the performance analysis and evaluation of AOMDV and AODV based upon throughput, packets lost, packets delay and quality of services. The author is going to implement both protocols using the ns 2 simulator.

4. Proposed Work

The Mobile ad hoc network is a self configure network, where every nodes self decision maker and also offer the service to various other nodes. MANET is infrastructure less network because nodes freely circulate someplace within the system, that's serious challenge for route establishment between communicator nodes. The numerous researchers

model the routing protocol i.e. proactive, reactive along with hybrid but reactive routing process is far more appropriate for mobile ad hoc communication, because reactive work in which on demand based routing needs. The routing power of process is rely on the system problems and also the routing procedure of connection establishment to data delivery in powerful network. The system factors are measures within the heavy load and also light load. The routing protocol AODV is perfect unipath protocol for MANET environment. The load distribution and balancing is the extra work in the AODV protocol but likely just in one track. But in AOMDV protocol has a inbuilt load balancing strategy through the options for information delivery. In this particular work our objective to evaluate the behaviour and hidden performance parameter of AOMDV and AODV routing i.e. contention, queue analysis, congestion etc. multipath routing is somewhat better routing approach where several nodes simultaneously share the common channel, since its give multipath between communicator nodes and also much better personal channel utilization technique. With the assistance of AOMDV routing approach average end-to-end delay and also routing overhead minimized and also improved the functionality of the system. The AOMDV is much better and has efficient data delivery. The few of the benefits of the AOMDV multipath routing protocols over AODV unipath are:-

- Providing the alternative path for information delivery.
- Includes the ability of load balancing or maybe distribution to other network nodes efficiently.
- The chance of retransmission of information is decreased by that the flooding of routing packets is lessened.
- The typical end to end delay is minimized and also features greater data delivery.

5. Simulation Environment

Mobile ad hoc network routing protocol are simulated through network simulator 2 and use following provided simulation parameter. Because of node mobility, each node is powerful that develop the issue how you can manage network topology and for that usage ad hoc on demand based routing protocol AODV, AOMDV and established the road between sources to destination. each routing are uses drop tail queue because that retail store incoming packet on first come first serve bases even though queue is complete than packet fall from the tail bit (top of the queue), its offer equal service to each people. Next is antenna sort as a omni directional which distribute data throughout the direction in identical power that's benefit while uses MANET communication because absolutely no guarantee the place that the node legitimate place in which direction and real time in especially time located. In this particular table at the same time define various basic required details because of the interaction and also established the system.

6. Simulation Parameters

The simulation of network is done on the basis of following simulation parameters mentioned in table1. These simulation parameters are common for both the routing protocols.

Table 1 Simulation Parameters

Parameters	Values
Network Size	1200*1200m
Number of Mobile Nodes	100
Channel	Wireless Channel
Radio-Propagation Model	Two Ray Ground
MAC	802.11
Interface Queue	Drop Tail Pri-Queue
Antenna Model	Omni Antenna
Routing Protocol	AODV, AOMDV
Transport Layer	TCP, UDP
Application Layer	FTP, CBR
Packet Size	500 byte
Mobility Model	Random
Simulation End	100 second

Performance Metrics

- **Average Load:**

It is a total sum of all node loads divide by total number of participated node and calculated by

- **Average load = $\sum k_i / n$**

Where i = 1 to n, k = load of node and n = participated node The average load analysis provides the load distribution factor of network where that is minimum it means load is fairly distributed and minimizes the network congestion and increase the performance of the network.

- **End to End Delay:** The Daley is calculate by the time taken of data sends from sender to receiver, its includes all the possible delays caused by buffering during route discovery latency, queuing at the interface queue, retransmission delays at the MAC, and propagation and transfer times.

- **End-to-End delay = ($Buf_d + Q_d + rt_d + prop_d + Tx_d$)**

Where Buf_d = buffering during route discovery latency

Q_d= queuing delay

rt_d= retransmission delays

$Prop_d$= propagation delay

Tx_d= transfer delay

7. Results Discussion

The simulation results are examined on the foundation of the deemed the performance and simulation parameters of AOMDV and AODV is calculated through performance metrics.

A. Average Load Analysis of AOMDV and AODV

The load handling electrical capacity of routing protocol is enhances the routing performance. The routing protocol is participating in the key part in information delivery. These protocols are offers the hyperlink in the middle of sender to receiver through multi hop selection. The AODV is established individual link but AOMDV can create numerous links in the middle of receiver and also sender. In AODV the typical load is aproximatelly 1.3 % but the AOMDV multipath protocol load management is aproximatelly one %. This evaluation is reveals that, AOMDV is distributing the load effectively and also offers better routing performance than AODV.

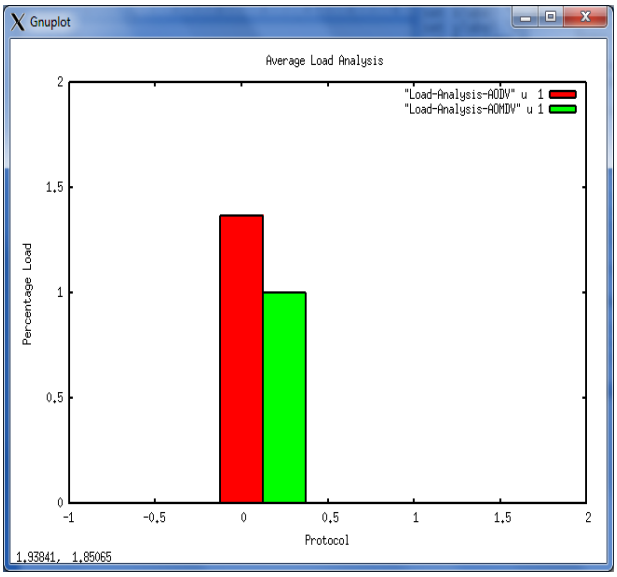

Figure1 Average Load Analysis

Maximum Load Handling of AODV and AOMDV

The one course can not deal with the load in network effectively however in multipath routing the load is managed effectively due to alternative path is definitely prevails, if the present you are fail. Undoubtedly AODV may be the effective routing protocol in MANET but this process is created the one website link in the middle of receiver and sender by that their load handling capability is minimal i.e. stated in this evaluation. The optimum load handling analysis of AOMDV and AODV is pointed out in figure one. The max load on AODV protocol is aproximatelly fourteen % but AOMDV is healthy the load by that max load on AODV is just three %, which reveals better routing performance.

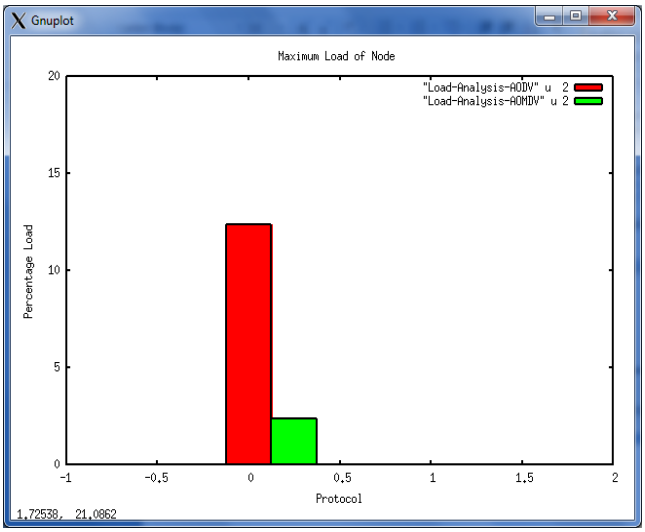

Figure1 Load Handling Analysis

End -to-End Delay Analysis of AODV and AOMDV

The greater information receiving in community is displays the potential for retransmission of information is minimum however their opposite is creates the chance of data loss of maximum delay in network. In this particular graph the end-to-end delay (measures in milli seconds) analysis of AOMDV and AODV routing protocols is examined and view that the functionality of AOMDV is much better due to minimizes the potential for retransmission. The maximum delay is matter in AODV is aproximatelly 20ms but at time twenty seconds but AOMDV maximum delay is matter four ms at the conclusion of simulation.

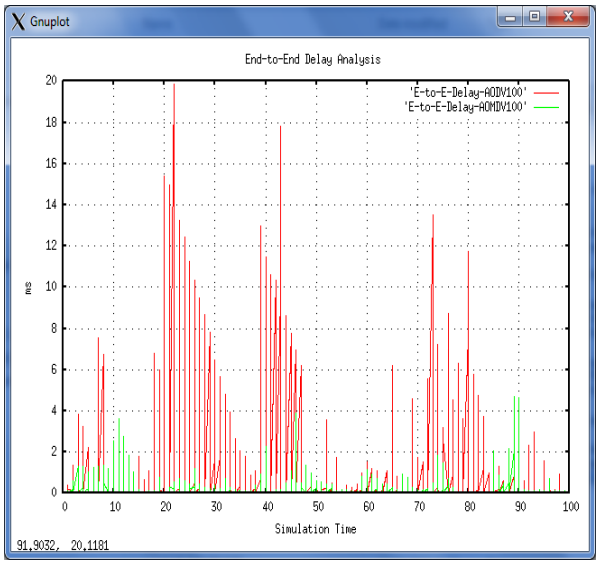

Figure1 End -to-End Delay Analysis

Routing Load Analysis of AODV and AOMDV

The routing packets are flooding by every routing process to obtaining receiver and sender for created link in the middle of sender and receiver. The guided media is offers the reliable and stable path however in wireless system the indicators are goes in air and in MANET nodes may also be moves randomly and attempt to keep the connectivity of theirs. The much less routing packets flooding is verify the greater routing performance i.e. the functionality of AOMD process and just opposite of the performance of AODV is leading the degradable routing performance. The minimum routing packers flooding is correspond to improved data receiving in powerful network.

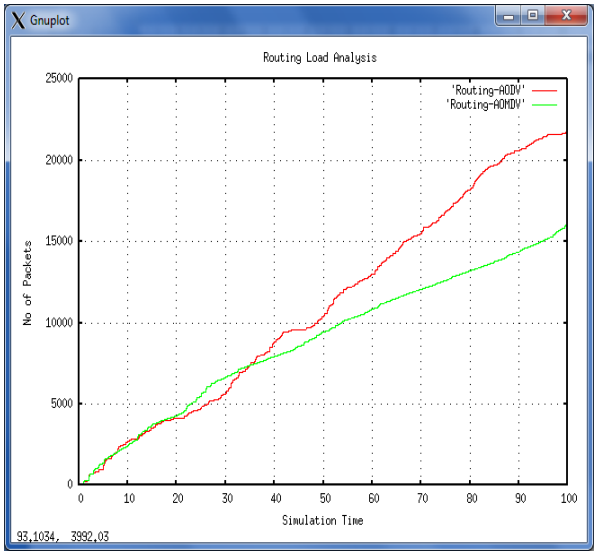

Figure 1 Routing Load Analysis

Packet Delivery Ratio (PDR) Analysis of AODV and AOMDV

The package delivery Ratio (PDR) analysis is determining the portion of information packets received at destination. The greater information receiving w.r.t sending is shows the greater PDR performance. The PDR overall performance of AODV protocol is aproximatelly ninety one % up to end of simulation. The AODV routing performance is developing the curve from sixty to seventy to eighty after which reaches to eighty to ninety

but in AOMDV routing protocol the efficiency is aproximatelly ninety four % at the getting started and also maintained at ninety three % up to end of simulation. The packets receiving of AOMDV is much better compared to AODV due to much better load handling and least drop of packets.

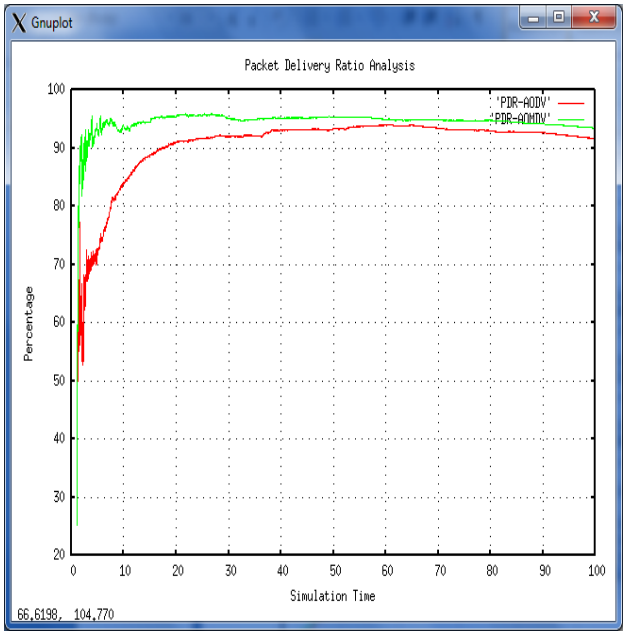

Figure 1 PDR Analysis

Summarized Routing Performance of AODV and AOMDV

The AOMDV is offers the greater routing performance then AODV due to much better load handling capability. The routing performance of AODV and AOMDV is mentioned in table one. The delay and also NRL performance is just about more than a third reduced. In this particular table the routing performance as PDR, NRL, delay along with packets drop are illustrated that the AOMDV may be the much better routing process for data receiving.

Figure 1 Overall Summery

Parameter	***AODV***	***AOMDV***
SEND	9004	10828
RECV	8254	10117
ROUTINGPKTS	713	289
PDF	91.67	93.43
Average e-e delay(ms)	162.41	50.3
NRL	0.09	0.03

Packets Drop Reasons in AODV and AOMDV

You will find numerous various factors of packets dropping in network. These causes are degrades the routing performance. The various fall reason used in table one shows that because of congestion in AODV substantial amount of packets are dropped but AOMDV is decreased it a third and also reveals the twelve % performance improvement than AODV. The AOMDV protocol is offers the sure information delivery and also much better information delivery than AODV protocol.

Table 1 All Type Packet Drop Analysis

Parameter	**AODV**		**AOMDV**	
Drop from Contention	67		31	
Drop from Queue	1		0	
Drop from Timeout and Call back	603		616	
Total Drop Via Congestion	3690		1095	
Total Drop	4361	19.53%	1742	7.58%
Actual Performance	17971	80.47%	21234	92.42%

8. Conclusion and Future Work

In this particular paper proposed new parameter i.e. percentage of load, regular greatest and load percentage of load after that secret data drop dependent parameter is examine i.e. contention, queue, congestion and call-back etc. the define parameter in addition to understood parameter based examine the actions of AOMDV and AODV routing along with determine that AOMDV (ad hoc on demand multipath distance vector) routing is outperform with regard to other element, because that employs the multipath based packet switching mechanism for data communication. Here view the behaviour through pursuing aspects.

- Multipath routing send out twenty % more information as compare to AODV routing
- AOMDV based approach receives twenty two % more information from AODV • Routing overhead of multipath mechanism is sixty % less than uni path routing ad hoc on demand multipath distance vector offers 1.76 % more packet delivery ratio as compare to AODV
- From the above issue determine that ad hoc on demand multipath distance vector routing is a bit better as compare to AODV. Multipath routing is use complete in which network rush is increased so further we make use of the AOMDV routing and also the development of its to fine graining the paper and raises the system performance with respect to quality of service and security problem of AOMDV.
- AOMDV is uniformly spread the load of community to other participated node but AODV doesn't distribute uniformly
- AOMDV is superb with regard to other aspect since data fall is just 7.58 %, but AODV perform significantly less as compare to AOMDV because its data drop is 19.53 % which is almost 3 times better compared to the AOMDV protocol.

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