Routing Scale: A Method for compute routing support Traffic examination in Wireless Network

Seshidhar Duvvada[1] T.Prabhakara Rao[2]

1(Final Year M.Tech Student, Dept. of CSE, Aditya Institute of Technology and Management (AITAM), Tekkali, Srikakulam, Andhra Pradesh ,seshidhard@gmail.com)

2(Asst.Professor, Dept. of CSE, Aditya Institute of Technology and Management (AITAM), Tekkali, Srikakulam, Andhra Pradesh, prabhakar.tatapudi@gmail.com)

Abstract: The framework for routing in network is aided by the monitoring of router supported is a previous thought. In Existing work the process of each flow over the network is aggregated by the nodes to maintain the traffic flow throughout the nodes. A simple scenario involves routers implementing uniform sampling or an approximation of it, with network operators being interested in monitoring a subset of the traffic. This is cost effective and time consuming. Once the network is established. We propose a new wireless adhoc sensor network where nodes will be continuously monitored. For feasible path transmission which is not fixed (this point will overcome the previous paper) will be generated by genetic approach for transmission. The IP's(each nodes address) will be tracked by router for each communication.

(index terms: monitoring, log)

Introduction: This work is totally related to routing the network flow in the feasible way and not categorized under any frame work. So this will frame first WSN with weighted paths and ip's. So to over come the regular approach for transmission we will approach an unique way of finding the feasible path. And once the path is found from our approach the source and destinations ip's will be logged with packet information. Next time if same path found for the similar packets transmission our system will check the log information and stops the duplicate transmission.

We propose Genetic approach*(12)* for finding the feasible path. This approach finds the best feasible path from network and gives the chance for communication.

(12) **Genetic approach**: We are proposing genetic approach to get best feasible path for transmission. This algorithm will take input as possible paths from transmission path. And once the possible paths are found then the weights will be converted in the 4-

bit binary form. They will be merged according to the chunks sequence and the bits will be swapped and negated. After that these binary values will be back to normal decimal values and they will be compared with the original chunks weights to get the feasible paths. Here the result weights will be considered in the 3 conditions. ***(1)***The first condition is all the paths will be same as original paths chunks. ***(2)***The second condition is 0 values will not be considered. ***(3)***Third condition is the none of the chunks weight should not more than the maximum weight in network.

This log information ie routing table will be monitored by main router which will re establish the path if regular flow of transmission for that particular flow will not match the threshold.

Wsn generation:

Input←no of nodes(n)

Output←wireless sensor network(W_s)

1. ***count←0***
2. ***$\lambda \leftarrow n$***
3. ***Rn← Root node***
4. ***$\sum_0^n Ip \leftarrow 0$***
5. ***For each l in n***
6. ***Loop start***
7. ***IPGen(l) // function efwhich will generate the unique IP.***
8. ***WeightGen(l , l+1)(10)*** *// function which will generate the weights*
9. ***Rn← Ip***
10. ***$W_s \varepsilon R_n$***
11. ***End loop***
12. ***Count++***

(10)**weightgen** is a function where weight*(11)* will be generated and assigned between two nodes. The generated weight will be in routing table for every communication. In the above format *(11)* .

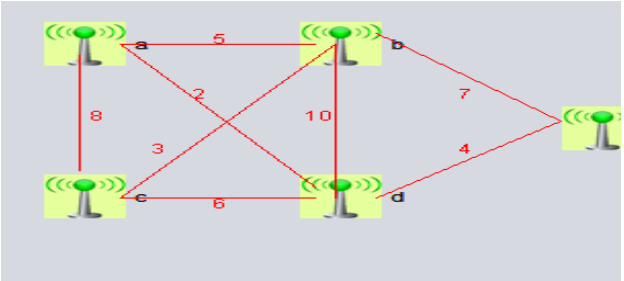
According to the frequency of the communications from selected source to destinations, each every communications will be allotted with unique identifier to have reduce redundancy. So when ever next communication comes into picture our router will check the routing table to overcome retransmission and duplications.

Routing tequnique is used to find the best feasible path for retransmission of the selected nodes and data. Basically whenever the source(N*n*) and destination (N*m*) is selected normally in our proposed system the

router node will first check the if there is already any transmission is happened in that path , if so it will check that data and transmission frequency if it finds aggregation of 70% less then system will reconstruct the path for the source and destination. So the path reconstruction will be next best feasible path for the same source and destination. For this particular scenario we follow an unique approach called drifting to get the best feasible path. Normally drifting in this case is % calculation to get best feasible path in consideration with 2 attributes (weights , threshold). So our drift algorithm will find the best feasible paths if threshold is not matching.

A dynamic vector will maintain the weights between all nodes, so that by using this vector the next best path will be derived and will be considered for transmission.

Geneticalgorithm:



Pic 3.

	A	B	C	D	E
A	X	5	8	2	C
B	5	X	3	10	7
C	8	3	X	6	C
D	2	10	6	X	4
E	C	7	C	4	X

C chunks

Pic4

We proposed genetic algorithm to find the feasible paths in the given transmission path. Normally network is with nodes and constructed for transmission for all nodes to communicate. Once path is given example (source node ***a*** and destination node is ***b*** . So first this algorithm will take an initiative to get the possible paths(for the particular path from a to b).

Feasible Path Found:

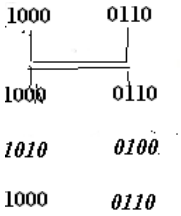
In this case the possible paths are ***[[ad, abd, acd, abed, acbed, abcd, acbd]]***. Now genetic technique will take the inputs as weights between these possible paths with chunks.if we take 1st path **ad** from source **a** to destination **d.** it is one of the path in available paths in network. The path **ad** link capacity is **2**.the value will be converted into binary as **0010**. Here

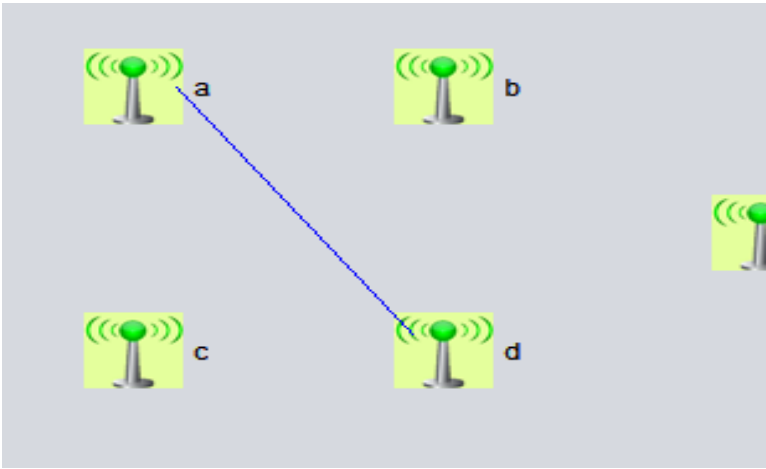
only one path is existed so we cannot do swapping to this single value. We can take this as one feasible path.this also considered best shortest path too.

For example in the above set we have 7 possible paths are available and if we take 3rd path ***acd*** then available chunks are ***{ ac , cd}*** with weights from network ***{ 8 , 6}.*** Now for all paths sequentially the chunks will be framed and with weights and then binary (4-bit) information will be generated and in the above case with ***acd*** the generated binary information is as follows ***{1000, 0110}.***

Take first **1000** and **0110** which are first and second paths weights in ***acd*** path and chunks' are ***ac*** and ***cd*** **(8,6).** We have to do swapping for that now from first weight of binary value we take first 2 bits from first weight and last 2 bits form second weight and now the binary value after merging is **1000**. After the take first 2bits from second weight and last 2bits from first weight and after merging the value is **0110** now if we merge these outputs the binary value would e ***1010 0100***. Now the third bit will be negated in these 2 binary values which results **1000** ***0110*** which is of {***8, 6}***. Now if the result is changed from ***{8, 6}*** which is original, so the whole path will come under feasible path. so the whole path will come under feasible path.

So **acd** will be taken as best feasible path from source ***a*** to destination **d** paths list. So we consider only paths which are same after doing genetic approach. So then the feasible best path will be found.





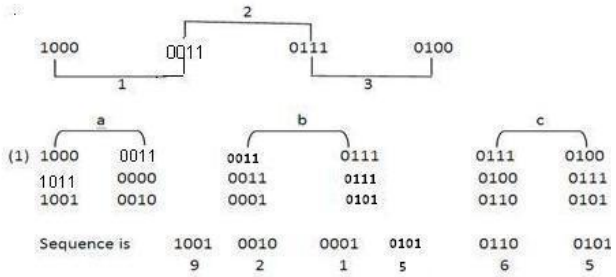
Non feasible Path:

In this case the possible paths are ***{ad , abd , acd , abed , acbed , abcd , acbd}***. Now genetic technique will take the inputs as weigths between these possible paths with chunks. For example in the above set we have 7 possible paths are available and if we

take 5th path acbed then available chunks are ***{ ac , cb , be , ed}*** with weights from network ***{ 8 , 3 , 7 , 4}.*** Now for all paths sequentially the chunks will be framed and with weights and then binary(4-bit) information will be generated and in the above case with ***acbed*** the generated binary information is as follows***{1000 , 0011 , 0111 , 0100}.***

Take first 1000 and 0010 which are first and second paths weights in ***acbed*** path and chunks' are ***ac*** and ***cb*** (8,3). Now from first weight of binary value we take first 2 bits from first consider only paths which are same after doing genetic approach. So then the feasible best path will be found.

Because this path could not existing in the network between source and destination. Therefore feasible best path was not found here.



Pic5

Genetic Algorithm:

weight and last 2 bits form second weight and now the binary value after merging is 1010. After the take first 2bits from second weight and last 2bits from first weight and after merging the value is 1000 now if we merge these outputs the binary value would e ***1010 1000***. Now the third bit will be negated in these 2 binary values which results ***1000 1010*** which is of ***{8,10}***. Now if the result is changed from ***{8,3}*** which is original, so the whole path will not come under feasible path, So acbed will be ignored from feasible paths list. So we

Among Possible paths between source and destination we get only one best and shortest path by monitoring with genetic approach.

Input: Path for transmission

Output: Feasible Paths(fp)

Initialization:

$\sum P_P \leftarrow 0$ //All possible paths

$\sum C_h \leftarrow 0$ //Available paths

$\sum P_w \leftarrow 0$ //Available weights for chunks

$n \leftarrow 0$ //Total no of chunks

$\int fp \leftarrow 0$ //feasible paths

$\sum B_i \leftarrow 0, \sum B_0 \leftarrow 0, \sum R_B \leftarrow 0$

For each path P in P_p

Loop starts

For each node n in P

$C_h \leftarrow CHUNK(n, n+1)$

End loop

For each C in C_h

$P_w \leftarrow P_w$(GETWEIGHT($\sum_n^{n+1} C_h$))
//Available weights

End loop

Loop start

For each W in P_w

Loop start

$B_i \leftarrow$BINARY(w) //Binary conversion

End loop

For each b in B_i

$B_0 \leftarrow$GENETIC(b) //Genetic Fuction

End loop

//function for conversion binary to decimal

$R_b \leftarrow CONVERT(B_0)$

Above algorithm generates the available feasible paths with weights. Now we have 3 conditions to be considered in this case to get the best feasible paths.

Conditions:

1. All the generated weights after the above calculation should be same weights as the original network weights.
2. None of the generated weight should be 0 value.
3. All the individual chunks generated values should not cross the maximum valued weight in the network.

In the above practical example the ***ad*** transmission if the feasible paths generated by above calculation are ***{ ad }*** with ***{2}*** and **{acd}** with{8,6}, so if we take the above conditions second sets of weights practically not matching with the above 1st and 3rd conditions. 4 is not matching with the original weight of ***ad*** and 11 is crossed the maximum weight in the network(10). So now best feasible paths are ***{ ad , acd }***. So now the best path is ad with weight 2 which is shortest path communication.

Now the feasible path for ad is ad only. After the transmission of the packets from source(a) to destination(d) the transmitted path and ip's information and packets information will be maintained in the log for avoiding the duplication of transmission in the same path same set of packets. Once the path is established for transmission our system will check for the log if any duplicate path which is already transmitted in that path. So if system found that transmitted path and next it checks for the current transmission packets with the transmitted packets for that particular path in this case system will check for ad for our work example.

Related Work:

Standard intent processors for Software program airwaves happen to be talked about for many years. With all the emergence regarding more robust multi-core architectures along with fresh instruction sets, GPPs are getting to be a lot more capable of handling wireless starting wedding ring finalizing. Weighed against regular BULL CRAP that happen to be structured about complicated multi-architecture tools comprising a mix of ASICs, network processors, DSPs or even FPGAs, GPP structured BSs tend to be scalable along with accommodating. It has triggered fresh SDR tools getting manufactured by a variety of teams. [18] compares Program DEMONSTRATION system a number of popular architectures along with proposes a new multi-core structures called SOFT DRINKS, which usually meets the needs for W-CDMA along with 802. 11a systems. [19] offers your multi-core GPP structured Sora software program airwaves system for 802. 11a/g systems along with solves many style problems within assembly your finalizing along with latency demands these systems. [19] is usually closest in order to our own operate; nevertheless, it targets an individual terminal or even access position within Wireless structured LANs whilst most of us concentrate on TDD BULL CRAP system along with BULL CRAP pooling along with RRHs for 4G wireless broadband within large area cpa networks. This really is an second time beginners part of your recognition in the wireless network impair plus the style problems are generally very different as a result of should service TDD timing,

TDD RRHs along with several starting place instances on a

contributed system. Other than operate by simply study areas, at this time there additionally can be found

industrial SDR alternatives based on GPP tools, such as Vanu's multiran answer [20]. This is the cost-effective selection, since cost regarding antennas, gadgets, along with backhaul could most become contributed amid providers. Such industrial deployments indicate a acclaim for GPPs found in BULL CRAP style. Nevertheless, Vanu's answer is perfect for 2G along with FDD systems, exactly where the machine demands are generally far more relaxed, regardless of for throughput or even timing control.

Future Enhancement:

The paper describes possible enhancements of peer-to-peer (P2P) file transfer by providing users with a router in order to initiate the start of file transfer on their machine(s). In addition, control and monitoring of the file transfer can be performed on their machine(s) of possible technical limitations such as file size and destination nodes. Users are able to obtain control and/or monitoring in a few various ways including the use of servers. The paper also describes a variety of transfer methods, work with more central servers, and work with source nodes and explains file transfer between peers that cannot establish a direct connection. Furthermore, the paper identifies a range of potential problems that could arise from building the system

Conclusion:

In this paper we proposed an approach which is feasible enough to maintain the servers(nodes) in an effective manner.

For feasible path transmission which is not fixed is generated by a genetic approach.

A new wireless adhoc sensor network is established where nodes are continously monitored.

References:

CTIA, Cellular Telecommunications & Internet Association Web Site (1999), Coverage Maps, http://www.wirelessdata.org/maps/index.asp

Gao, Y., Liu, Z. (2001), "Differential Satellite Positioning and Navigation over Internet, GEOINFORMATICS' 2001, May 23-25, 2001, Bangkok, Thailand

GSM World (2001). GSM Association Web Site: http://www.gsmworld.com/gsminfo/maps/ca/mi/1_0_1.html

Hada, H., S. Yamaguchi, Y. Kawakita, J. Murai (2000). “Design of Internet Based Reference Station Network for New Augmentation System”, Proceedings of ION GPS’2000, Salt Lake City, Utah, September 19-22, 2000.

Hada, H., H. Sunahara, K. Uehara, J. Murai, I. Petrovski, H. Torimoto, S. Kawaguchi (1999). “New Differential and RTK Corrections Service for Mobile Users, Based on the Internet”, Proceedings of ION GPS’1999, Nashville, Tennessee, September 14-17, 1999.

Lee, Y., H. Kim, J. Hong, G. Jee, Y. Lee, C. Park (2000). “Internet Based DGPS for Mobile Communication User”, Proceedings of ION GPS’2000, Salt Lake City, Utah, September 19-22, 2000.

Lin, Yi-Bing (2001), "Wireless and Mobile Network Architectures", 2001, John Wiley & Sons Ltd.

Liu, Z., Gao, Y., and Liu, ZZ (2001), "Development of an Internet-Based Wireless Platform for Mobile Information Management and Service", ION National Technical Meeting 2001, Jan.22-24, Los Angles, USA.

Magellan Corporation (1998), "GG24 OEM Board & Sensor GPS + GLONASS Reference Manual".

Magellan Corporation (2000), "Ashtech SSRadio Specification", http://www.ashtech.com/Media/PDF/SSRadio_3.99.pdf

E. Oh and B. Krishnamachari, “Energy savings through dynamic base station switching in cellular wireless access networks,” in Proc. IEEE GLOBECOM, Miami, FL, Dec. 2010.

“An inefficient truth,” Global Action Plan, Tech. Rep., Dec. 2007. [Online]. Available:http://www.globalactionplan.org.uk/

Gartner, “Green IT: The new industry shock wave,” in Presentation Symp./ITXPO Conf., Apr. 2007.

J. Malmodin, A. Moberg, D. Lunden, G. Finnveden, and N. Lovehagen,“Greenhouse gas emissions and operational electricity use in the ICT and entertainment & media sectors,” J. Industrial Ecology, vol. 14, no. 5, pp. 770–790, Oct. 2010.

A. Fehske, G. Fettweis, J. Malmodin, and G. Biczok, "The global footprint of mobile communications: The ecological and economic perspective," IEEE Commun. Mag., vol. 49, no. 8, pp. 55–62, Aug. 2011.

"Mobile network energy OPEX to rise dramatically to $22 billion in 2013," Cellular News, July 3, 2008.

K. Son, H. Kim, Y. Yi, and B. Krishnamachari, "Toward energy-efficient operation of base stations in cellular wireless networks," a book chapter of Green Communications: Theoretical Fundamentals, Algorithms, and Applications (ISBN: 978-1-4665-0107-2), CRC Press, Taylor & Francis, 2012.

M. A. Marsan, L. Chiaraviglio, D. Ciullo, and M. Meo, "Optimal energy savings in cellular access networks," in Proc. IEEE GreenComm, Dresden, Germany, June 2009.

TATAPUDI PRABHAKARA RAO obtained the B.Tech. Degree in CSE from BVC College of Engineering, 2004, M.Tech Degree in GIET 2009. He has more than 08 months of industrial Experience and 08 Years of Teaching Experience. Currently he is working as a Assistant Professor in the Department of computer science & Engineering, Aditya Institute of Technology And Management, Tekkali, Srikakulam District, Andhra Pradesh his research intrests Networking,Mobile computing,Imageprocessing,Parallel and high power computing,Bigdata, mobile forensic

BIOGRAPHY

seshidhar.Duvvada received B.Tech Degree in computer science and Engineering from pydah college of engineering, and technology in 2009.currently pursuing M.tech in Aditya Institute of Technology & Management, Tekkali, Srikakulam, Andhra Pradesh, India. Research interests are java ,dot net networking etc