

A Technique for Fast Reroute on Data Transmission with Data Protection

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Abstract: It is always viewed that data transmission get break down which is unique in all the IP sector in networks thus there many ideas which are given for fast rerouting in local areas by giving a high range of speed in data transferring inspite of the break downs. The overall ideas are only used for managing and preventing the single break downs only these ideas can only be used for single where as in multiple break downs they reflect as loops and even drop the data because of multiple non-partisan break downs are not handled by using such idea's. To safeguard the flow of data even in multiple breaks down we scheme LOLS (Localized On-demand Link State). In LOLS the block list are converted into packets where sets are small in number in which links are failed and come across its path and next node is determined by omitting the block list. A ascendable LOLS is used for protecting and routing the data transmission in multiple break downs. Degrade is used to determine the links in LOLS. In this the world widely used and famous state greater than the current state. In LOLS block lists are in packets and next node is mentioned by running the block list links. This research gives a solution for the path break down occurring in data transmission and also gives protection to the data while they are transferred. Grade diffusion and direct diffusion are the two algorithms which are used in this paper.

Keywords: Packets, Grade diffusion, directed diffusion, Block lists, fast reroute.

I. INTRODUCTION

This paper is fully dealing with the data transmission under a sequence way and thus by also providing a shortest path in transmission of data that is especially looks after the records transmission as a consequence the use of this we will switch

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the information without dealing with any issues like deadlocks, route failure and so on. Such case can prevented in this observe. Here are two primary algorithms are used for this observe grade diffusion and direct diffusion algorithms are used. Grade diffusion is used to create the direction primarily based on its value cost of the node and makes the exceptional route among the nodes.

The direct diffusion set of rules is focusing the transmission relay of information inside the nodes. LOLS underneath LOLS every packet incorporates single blacklist, that's minimum rooted of failed hyperlinks come upon alongside of route, the subsequent stage is resolute by way of apart from the blacklisted hyperlinks. The illustration of the blacklist is reorganising as soon as the packets made ahead growth on the way to the end point and subsequently can be instructed in some bits. Additionally, the blacklist-based totally promoting the admission on a router are pre-computed for some rooted on failures necessitating preclusion. White list present in LOLS method are prevalent, this paper portray how it is be carried out for making certain furthering to completely available end point in case every links or nodes screw ups. System analysis and layout, is the method of collecting and decoding information, diagnosing trouble and the usage of the information to advise improvement to the gadget. Before improvement of any undertaking can be pursued, a system examine is conducted to learn the details of the contemporary business solution. Data accumulated via the have a look at bureaucracy the premise for growing opportunity layout techniques. Certainly all businesses are systems that have interaction with their surroundings via receiving enter and producing output. It is a management method used in designing a brand new machine, enhancing a present gadget or fixing trouble. Machine analysis does no longer assure that the consumer will derive a perfect method to a problem. This depends completely on the way one design a system to make the most the capacity in the technique. To position it in another way, creativity is as much as should pre-layout the look at and trouble fixing process and examine each successive step within the device evaluation. taking most of these factors into consideration and with the expertise of the inter-courting among the various fields and section and their ability interactions,

they may consider for developing the whole gadget in an integrated manner, this venture is evolved to full fill all of the criteria in the. The management approach is likewise allows us in increase and layout of the new gadget or to improve the prevailing machine. This research gives a solution for data transmission in case of multiple failures in the nodes. Hence this is a better solution for the data transmission and routing the links in data transfer.

II. EXISTING SYSTEM

In early data was transmitted from source to destination via networks. Since now days this process is done in large scale and more number of works are involved the process becomes a hard task to perform. Problems like deadlock on data transmission, delay of data, data lost during transmission, data security are important problems the above problems were a barrier to the data transmission in fast route. Data security is also an important one in data transmission though the data is transmitted in fast route security to the data is important. There were only two ways of data transmission: one was data transmission in a fast way and another was data transmission with security. If a data transmission is done in a fast way it does not provide any security to the data. At the same

time if data transmission is done in security basics the fast route of data transmission is not possible. In an existing system this concept of multi routing was only from source to destination that is within the network. Though it uses various techniques to data loss handling, managing the time delay, loss of acknowledgement.

III. PROPOSED SYSTEM

A LOLS routing technique is used in this, so that each packet contains block lists which has taken a set of links failed and come across in track and the ensuing hop is known through preclude in block lists. Whenever a packet remains doing forward process the block lists is reset in headed for the destination and thus encrypt with few bits. More block lists actions are passed into router so that the router can be prefigure out for giving protection to failure links. LOLS is a universal approach this paper gives the working of this approach is used in giving assurance to head for reaching destinations in situations like more than one link gets failure. Evaluation is done in failure cases grounded on different tangible net topologies are needed so the Localized On-demand Link requires six bits at the lowest circumstance to transmit block lists data.

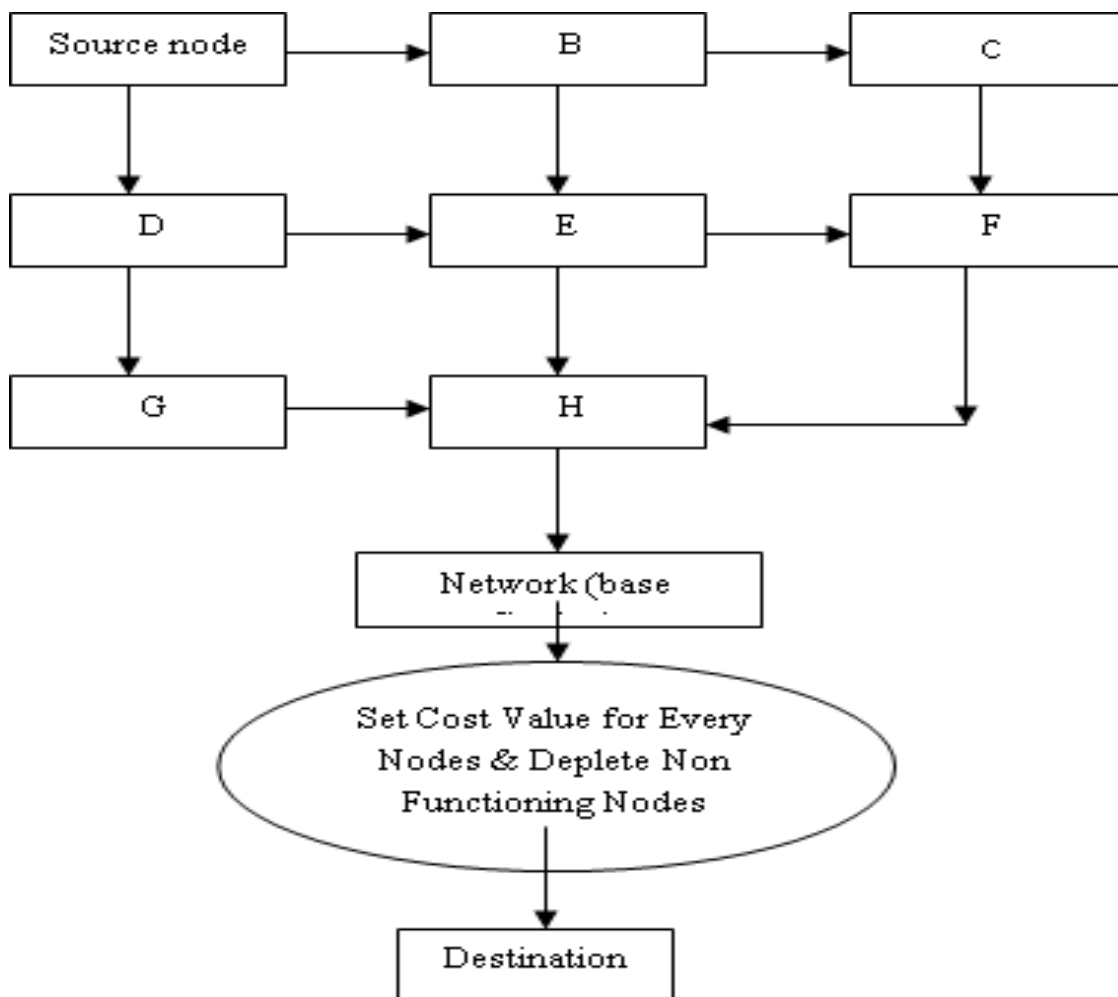


Fig.1. Working principle

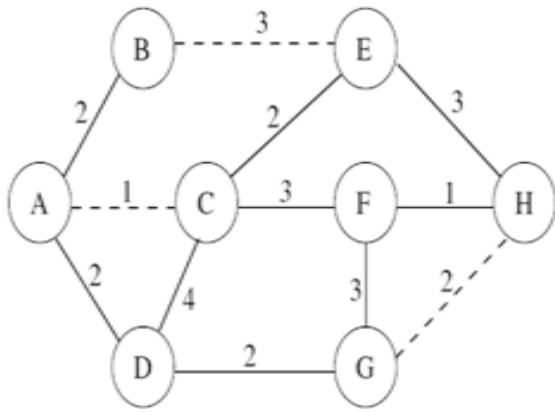


Fig.2. System Architecture

The above is the working principle of the entire paper and it also states how the data is transferred from source to destination. The nodes which are used for data transmission are also explained in a diagram format. The architecture state the inter connection of the nodes and the line's indicates the path between the nodes and dotted line's indicates that the data transferring is not possible in between the nodes.

IV. RELATED WORKS DONE

A. LOLS:

The LOLS is Localized On-demand Link State. In this each packet contains a block list which has a minimum set of links which are failed and meet besides with its path, and the next node is named by exit of links in block lists. In our concept the block list is reset or replayed at the time of the packets do the forward progress which is moving in destination direction and hence used some small amount of bits. More block lists actions are passed into router so that the router can be pre figure out for giving protection to failure links. LOLS is a universal approach this paper gives the working of this approach is used in giving assure to head for reaching destinations in situations like more than one links get failure. Evaluation is done in failure cases based on different real network topologies are needed so that LOLS requires 6 bits in the lowest case to transmit block lists information.

B. BLOCK LIST

Each packet t contains a block list which has a minimum set of links which are failed and meet besides with its path, and the next node is named by exit of links in block lists. At initial stage the packet's present in block list is null and present null whenever there is no connection between the present and existing state of links in its path. When path reach with a connection link with its next node then the link is included to packet's block lists. Then the forward progress is started to the node. Again the same process is followed to do the packets in block lists. With these function it ensure that whenever there is a need for the process the function is repeated to reach the destination.

C. FAST REROUTE

It is one of the methods which is developed in situation when multiple link gets failed while a data is transferred from source to destination. This is the main solution which is given by us in this paper. This concept is used based on the cost

values of the nodes and algorithms are used in it o that by using these we can easily transfer data from source to destination without any deadlock's. Algorithm also provides a best path to transfer and also gives fast route and reroute.

D. DIRECT DIFFUSION ALGORITHM

The goal of the DD algorithm is to reduce the data relay transmission counts for power management. The DD algorithm is a query-driven transmission protocol. The collected data is transmitted only if it matches the query from the sink node. In the DD algorithm, the sink node provides the queries in the form of attribute-value pairs to the other sensor nodes by broadcasting the query packets to the whole network. Subsequently, the sensor nodes send the data back to the sink node only when it fits the queries.

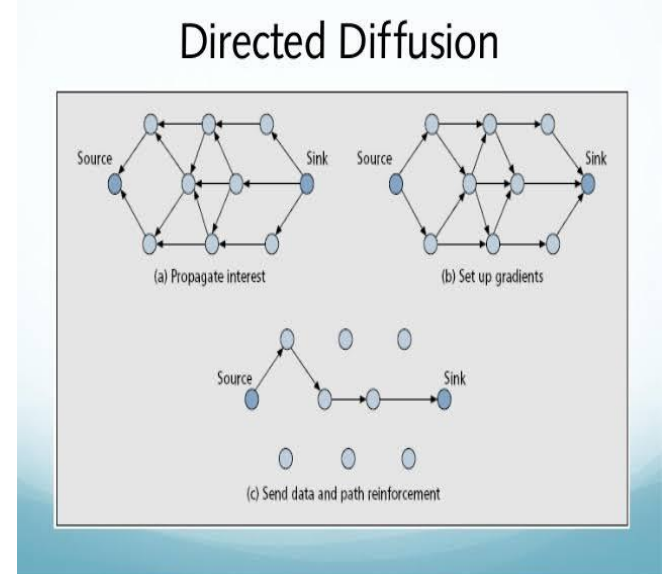


Fig.3. Directed Diffusion process

Above says how the directed diffusion is working and how checks it route are said in the diagram. The first is the source to destination in which you can see the links are facing the source node. In the second one you can see the links are from source to destination. This will happen only when the process is started. And last image states that by using directed diffusion you can see path which is applicable routing is found. Thus this is how a routing is performed by the using directed diffusion.

E. GRADE DIFFUSION ALGORITHM

This algorithm is mainly used to give solution for sensor node getting into problem during data transmission and also problem arising during the loading of sensor node. Apart from creating routing for each sensor node it also find the next node otherwise the node which is present near to source node so that by this it can reduce the loading of node in transmission. This algorithm is mainly focus on data transmission, data rely and node loading etc. are focused by this algorithm.

$$U(j) = \frac{p_k^{-1}}{\sum_i \in K P_i^{-1}}, K \in M \quad (1)$$

The K is a set of the grade value of the current node. The Pi is the value overloaded of i node.

The $U(J)$ is a probability of the nodes for transfer data. When the payload value is high than others in the grade table the probability of the node will be decreased. Thus the equation states that the nodes are chosen based on grade value. Current node selects in grade table is selected according to the equation 1 and the data package is sent to the node. The node which receives the data package updates its payload value according to equation 2.

$$\text{payload}_{m+1} = \begin{cases} 0, Q_1 \leq 0 \\ P_1, \text{otherwise} \end{cases} \quad (2)$$

$$Q_1 = \text{payload}_m \pm \frac{\text{payload}_m}{\text{grade}} \quad (3)$$

In equation 2: **payload m+1**: The node's payload value after the update of current node. **Payload m**: It is value of payload of the node before the update is done to the current node. **grade**: Current node's grade value.

$$\begin{aligned} \text{overload}_{m+1}^i &= \text{overload}_m^i \\ &+ (\text{payload}_{m+1} + \text{payload}_m) \end{aligned} \quad (4)$$

Equation 3 states that overload_m^i The i node's payload value in the grade table of current node.

$$\begin{aligned} L_{th} &= \text{avg} \left(\sum_{i \in k} \text{overload}_i \right) \\ &* \left(2 + \frac{\text{payload}}{\text{grade}} \right) \end{aligned} \quad (5)$$

k: It is a represent the nodes in the grade table of the current node. **overload_i** It is the overload value of the i^{th} node in grade table.

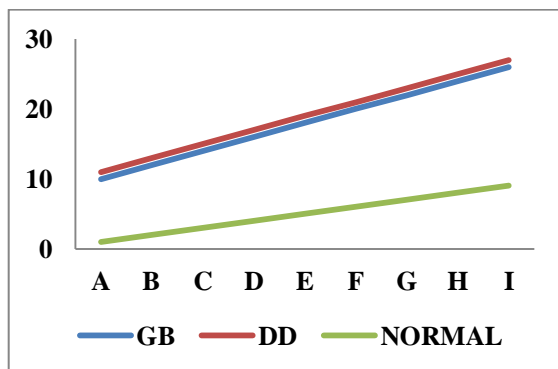


Fig.4. comparison between normal routing and routing with algorithms

In the above chart its clearly states that when compare to normal routing the routing with grade diffusion and directed diffusion range is high because the GD and DD applies the best routing and also rerouting techniques in the nodes so the nodes become more effective and thus the nodes are always ready in applying the concept in data transmission.

V. CONCLUSION

Rerouting and also finding the correct path for data transmission between the nodes are achieved here. Here grade diffusion and directed diffusion algorithms play vital role in data transmission by nodes. LOLS, block list, packets etc. are also applied. Apart from data transmission the data protection is also taken care here at the time of data transmission. This paper gives a solution for path failure and security on data at the time of transmission.

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