





- This approach is freeform as the distribution of direction message or guide line from one to multiple end points immediately.
- By following DSDV we can avoid the problem of resending same thickness of data where the destination end must be contain the autonomous property regarding the service to be delivered at the destination end. For e.g. Fire siren means that the left the building or this place

TORA: The Temporally Ordered Routing Algorithm (TORA) is an algorithm for routing data across Wireless Mesh Networks or Mobile ad hoc networks. It was developed by Vincent Park and Scott Corson at the University of Maryland and the Naval Research Laboratory. Park has patented his work, and it was licensed by Nova Engineering, who is marketing a wireless router product based on Parks algorithm. The TORA attempts to achieve a high degree of scalability using a "flat", non-hierarchical routing algorithm. In its operation the algorithm attempts to suppress, to the greatest extent possible, the generation of far-reaching control message propagation. In order to achieve this, the TORA does not use a shortest path solution, an approach which is unusual for routing algorithms of this type. TORA builds and maintains a Directed Acyclic Graph (DAG) rooted at a destination. No two nodes may have the same height. Information may flow from nodes with higher heights to nodes with lower heights. Information can therefore be thought of as a fluid that may only flow downhill. By maintaining a set of totally ordered heights at all times, TORA achieves loop-free multipath routing, as information cannot 'flow uphill' and so cross back on itself. The key design concepts of TORA are localization of control messages to a very small set of nodes near the occurrence of a topological change. To accomplish this, nodes need to maintain the routing information about adjacent (one hop) nodes. The protocol performs three basic functions:

- Route creation
- Route maintenance
- Route erasure

During the route creation and maintenance phases, nodes use a height metric to establish a directed acyclic graph (DAG) rooted at destination. Thereafter links are assigned based on the relative height metric of neighboring nodes. During the times of mobility the DAG is broken and the route maintenance unit comes into picture to reestablish a DAG routed at the destination. Timing is an important factor for TORA because the height metric is dependent on the logical time of the link failure. TORA's route erasure phase is essentially involving flooding a broadcast clear packet (CLR) throughout the network to erase invalid routes.

Route creation: A node which requires a link to a destination because it has no downstream neighbors for it sends a QRY (query) packet and sets its (formerly unset) route-required flag. A QRY packet contains the destination id of the node a route is sought to. The reply to a query is called an update UPD packet. It contains the height

quintuple of the neighbor node answering to a query and the destination field which tells for which destination the update was meant for. A node receiving a QRY packet does one of the following:

- If its route required flag is set, this means that it doesn't have to forward the QRY, because it has it already issued a QRY for the destination, but better discard it to prevent message overhead.
- If the node has no downstream links and the route-required flag was not set, it sets its route-required flag and rebroadcasts the QRY message.

A node receiving an update packet updates the height value of its neighbor in the table and takes one of the following actions:

- If the reflection bit of the neighbors height is not set and its route required flag is set it sets its height for the destination to that of its neighbors but increments d by one. It then deletes the RR flag and sends an UPD message to the neighbors, so they may route through it.
- If the neighbor route is not valid (which is indicated by the reflection bit) or the RR flag was unset, the node only updates the entry of the neighbor node in its table.

Route maintenance: Route maintenance in TORA has five different cases according to the flowchart below:

Example

- B still has a downstream link to the destination so no action is needed
- Partition detection and route erasure
- He links D-F and E-F reverse. Node D propagates the reference level.
- Node E now "reflects" the reference level. The reference heights of the neighbors are equal with the reflection bit not set. E sets the reflection bit to indicate the reflection and sets its offset to 0. Node C just propagates the new reference level.
- Node A now propagates the reference level.

Route Erasure

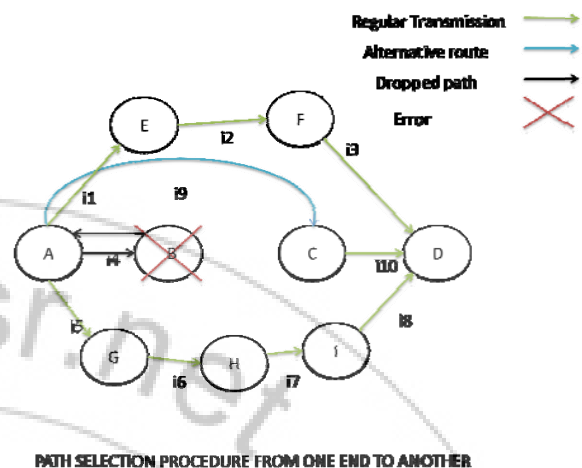
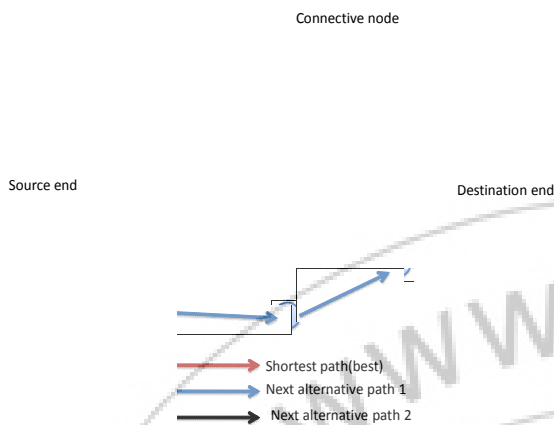
When a node has detected a partition it sets its height and the heights of all its neighbors for the destination in its table to NULL and it issues a CLR (Clear) packet. The CLR packet consists of the reflected reference level and the destination id.

If a node receives a CLR packet and the reference level matches its own reference level it sets all heights of the neighbors and its own for the destination to NULL and broadcasts the CLR packet. If the reference level doesn't match its own it just sets the heights of the neighbors its table matching the reflected reference level to NULL and updates their link status.

By using TORA approach:-TORA approach is used when there is large amount of data packet and that will be transmitted from source to destination node, but the problem is route is too busy or data file is large (it's hard

to carry the complete file over a dedicated route). So that the data file is divide into several small size data packets;

blocking probability for the given resources through a single and multi-path transmission to establish the superiority of the latter approach.



These data packets are assigned a unique index order that can be transmitted over the various path and rearrange at the destination end as per sequence allotted to the data packets to avoid the loss of data consistency.

#### 4. Proposal Work

we are highly emphasis on the transmission of data from one point to another point; in this paper we are going to describe some special case that are might be helpful to a better approach to select whether a path is select or not.

Case 1. Transmission of a large data file: Here we are consider a large file which contains a bulk amount of data that is to be transmitted at the single end (destination point). A new approach is to be selected for the transmission of data in the various phases as given below:

- Decompose the data records in to benefited parts.
- Assign the index to the each port of data record.
- Select the best paths from source to destination end.
- Collect the all the data stream at the destination end.
- Merge the data records as per the sequence allotted the data segments/ data packets.
- Collect and retrieve the information.

Into this is sent from one end to another end in parts, the parts are in small size as compare to complete data record at a time. This is might be take less time to keep a track continue for the large data transmission. The risk of path loss and data loss is reduced with great rate; the feature of rearrangement of data at the destination end helps to keep the consistency of data record. Exploiting multi-path transmission under a proposed adaptive link weight algorithm. Data transmission through multiple paths improves the connection probability by reducing the wavelength hold time on a link. Further it reduces traffic load on bottleneck links by distributing traffic over multiple paths in the network. The proposed approach uses multiple edge disjoint paths to mitigate the congestion problem through load balancing and improves the reliability. We study the effectiveness of the proposed algorithm using network simulation and estimate the call

Algorithm applied for the route deciding approach:

Step 1: Assign to every node a tentative distance value: set it to zero for our initial node and to infinity for all other nodes.

Step 2: Mark all nodes unvisited. Set the initial node as current. Create a set of the unvisited nodes called the unvisited set consisting of all the nodes.

Step 3: For the current node, consider all of its unvisited neighbors and calculate their tentative distances. Compare the newly calculated tentative distance to the current assigned value and assign the smaller one. For example, if the current node A is marked with a distance of 6, and the edge connecting it with a neighbor B has length 2, then the distance to B (through A) will be  $6 + 2 = 8$ . If B was previously marked with a distance greater than 8 then change it to 8. Otherwise, keep the current value.

Step 4: When we are done considering all of the neighbors of the current node, mark the current node as visited and remove it from the unvisited set. A visited node will never be checked again.

Step 5: If the destination node has been marked visited (when planning a route between two specific nodes) or if the smallest tentative distance among the nodes in the unvisited set is infinity (when planning a complete traversal; occurs when there is no connection between the initial node and remaining unvisited nodes), then stop. The algorithm has finished.

Step 6: Select the unvisited node that is marked with the smallest tentative distance, and set it as the new "current node" then go back to step 3.

The diagrams show that how the data is to be transmitted through various paths at the same end. As the simultaneous transmission of data is done the transmission time is must be reduced with the considerable amount; once the given direction is selected then the transmission is very within instance.

#### 5. Conclusion

This approach helps to provide transmission of data through the singular path as well as multipath. By using

this path, we can transmit single file to multiple data end & singular file transmission to the single end through multiple path .this approach helps to provide parallel transmission as well as sequential transmission which is the feature of shortest and finest and alternative path decided by merge of AODV, DSDV, TORA protocols. This is a guide about a way through which indication are provided complex feature of all advance protocols.

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