Enhancing the performance of Packet Retrieval mechanism in wireless communication by suing an Orthogonal Clustered searching Algorithm (OCSA) - an Overview

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Abstract: *In general either it may be a wired communication or wireless communication, the message /packet retrieval for the appropriate communication play an important role in order to determine the performance. There are two main functions performed by a routing algorithm are the selection of routes for various origin-destination pairs and the delivery of messages to their correct destination once the routes are selected. The second function is conceptually straightforward using a variety of protocols and data structures in order to involve in the packet retrieval operation. This paper mainly focusing on to reduce the time delay of the retrieval mechanisms of packet from the appropriate routers and improve the performance of the communication by using the proposed Orthogonal Clustered searching Algorithm (OCSA).*

Key words: *Cluster, Message, Orthogonal, Searching and Routing.*

I. INTRODUCTION

In general, to have frequently referred to the routing algorithm as the network layer protocol that guides packets through the communication subnet to their correct destination [1][2]. The times at which routing decisions are made depend on whether the network uses datagram's or virtual circuits. In a datagram network, two successive packets of the same user pair may travel along different routes, and a routing decision is necessary for each individual packet is illustrated in the figure 1.1.

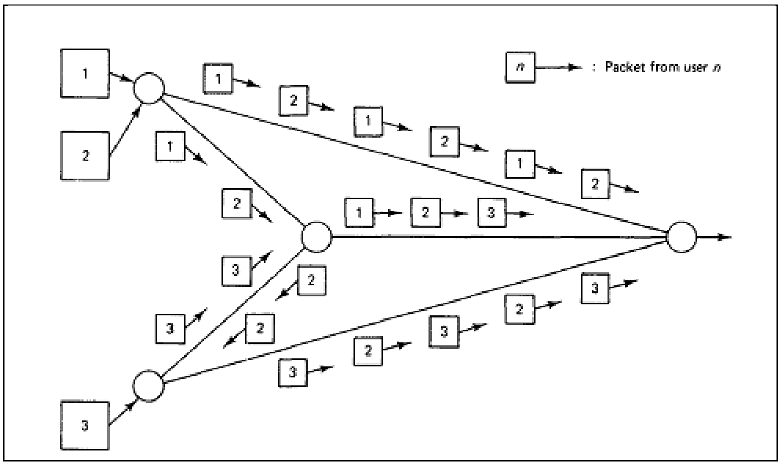

Figure 1.1 Packet Forwarding mechanisms

In a virtual circuit network, a routing decision is made when each virtual circuit is set up. The routing algorithm is used to choose the communication path for the virtual circuit. All packets of the virtual circuit subsequently use this path up to the time that the virtual circuit is either terminated or rerouted for some reason is illustrated in the figure 1.2

Routing messages are the other type of message that consumes network resources. This section considers the trade off between their resource consumption and network performance. With respect to this trade off, the static metric single shortest path routing is at one end of the spectrum that minimizes routing resources [3][4].

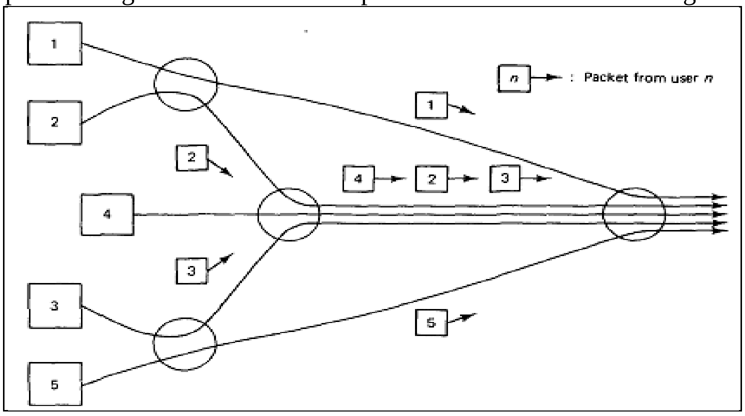

Figure 1.2 Packet forwarding mechanism in Virtual network

This model uses the least amount of resources among the three models because it computes only one path between a node pair, and these paths do not change unless the network topology changes. In this way , the mechanism of storage and retrieval of packets will be performed by using the proposed OCSA in the wireless communications.

II. EXISTING SYSTEM

The existing routing algorithms (for example distance vector, linked state routing and scout algorithms) for packet transmissions to causes traffic in the data transmission path and also it makes an delay for response. The general layout for the routing table infrastructure in all kinds of data transmission is shown by the following figure 1.3.

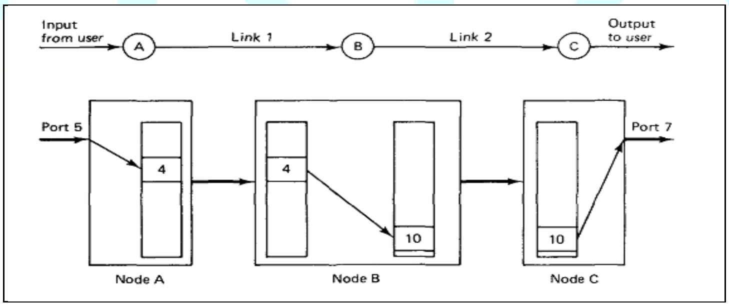

Figure 1.3 Routing Table structure

In every communication, the packet will be forwarded to the succeeding routing tables with the help of shortest path algorithms. In most of the occurrences, even the transmission select and shortest path also it causes heavy traffic in the communication channel. It's give a great impact of performance of the entire networks [4][5]. From the above figure 1.1, simply the incoming packets will be routed towards the destination without using any specialized algorithm from the node-A to node-C.

Many practical routing algorithms are based on the notion of a shortest path between two nodes. In that case, each communication link is assigned a positive number called its length. A link can have a different length in each direction. Each path (i.e., a sequence of links) between two nodes has a length equal to the sum of the lengths of its links. .

A shortest path routing algorithm routes each packet along a minimum length (or shortest) path between the origin and destination nodes of the packet [6][7][8]. The simplest possibility is for each link to have unit length, in which case a shortest path is simply a path with minimum number of links (also called a min-hop path).

More generally, the length of a link may depend on its transmission capacity and its projected traffic load. By using this one as the base for our research work and to add the additional information by using the concept of orthoganality for every packet transmission store and forward mechanism. It will be explained in a detailed manner in the proposed system architecture [9][10][11][12].

There are two main performance measures that are substantially affected by the routing algorithm-throughput (quantity of service) and average packet delay (quality of service). Routing interacts with flow control in determining these performance measures. It will be illustrated by the following figure 1.4.

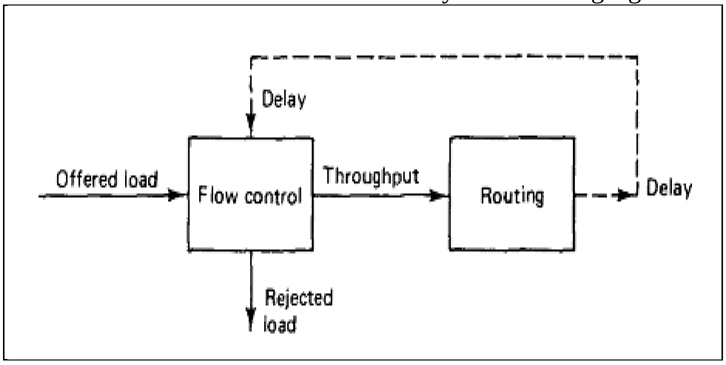

Figure 1.4 Performance metrics for routing mechanism.

III. PROPOSED SYSTEM

The proposed OCSA system consists of three major components: Location determination of the routing tables, identification of shortest path routing tables and determines the orthoganality of the routing tables placed in the range of shortest distance. Before the packet transmission from the initial node (Source) , the nearest routing tables will be gathered by using shortest path algorithm on the basis of distance vector routing mechanism. Then those routers are perpendicular (Orthoganality) with each other will be grouped under a cloud. From the figure 1.5, the routers placed in orthoganality will be grouped as a cluster into the respective clouds such as Cloud 1(C1), Cloud 2(C2), and Cloud 3(C3) like that. Each and every cloud comprising the routers which one meets the orthoganality constraints in order to conduct the packet transmission as well as the retrieval of the required packets while the client submits a request to the appropriate server in the wireless communication channel. The traffic accepted into the network will experience an average delay per packet that will depend on the routes chosen by the routing algorithm. However, throughput will also be greatly affected (if only indirectly) by the routing algorithm because typical flow control schemes operate on the basis of striking a balance between throughput and delay. Therefore, as the OCSA searching algorithm is more successful in keeping delay low, the flow control algorithm allows more traffic into the network and it will be proven in the future continuation of the same work with more experimental research.

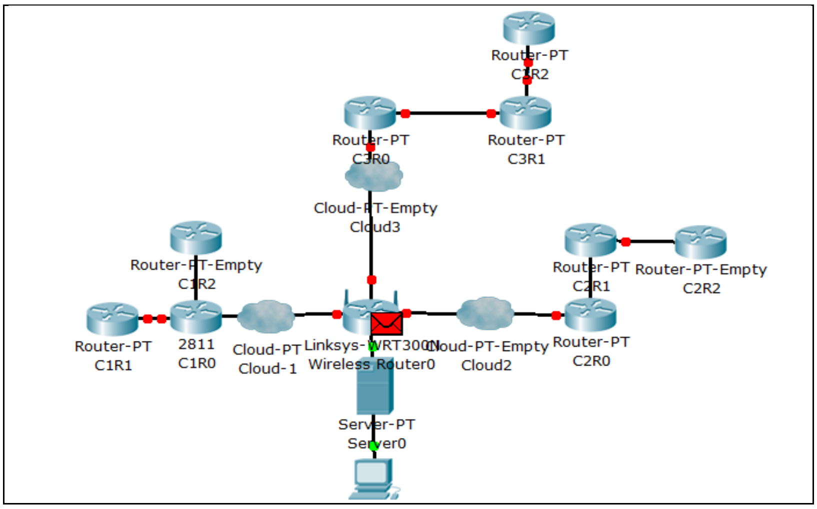

Figure 1.5 Proposed architecture of OCSA

IV. CONCLUSION

This paper focusing the architecture for the proposed Orthogonal Clustered Searching Algorithm (OCSA) for the packet transmission in the wireless communication. The Major components of the specified algorithm will be categorized into consecutive work for the implementation. It may cover the practical aspect for the algorithm analysis and performance for the transmission in entire communication channel.

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