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Delaunay Overlays for P2P Streaming Services

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Abstract: Visual and audio entertainment via cable, satellite systems are evolving to IPTV and P2PTV based systems. Commercial P2P streaming servers like Zattoo, Joost are some Content Delivery Networks(CDN) based on peer-to-peer architecture. When content is a static feed data delivery is better in broadcast based systems. But as the users volume for dynamic content soars up, internet scale search and data delivery beats any broadcast based systems. This is essentially the driving force behind P2P Streaming Services. P2P systems are usually classified as either tree-based push or mesh-based swarming and Zatto happens to a be a hybrid. Previously for performance improvement in Zattoo like systems receiver-based peer-division multiplexing engine involving repeater nodes to deliver live streaming content on a p2p network was developed. This hybrid approach happens to be a resource drain with performance and scalability issues. Such an implementation can only be handled by commercial systems like Zattoo. Considering medium and small scale streaming systems we propose to use P2PStreaming services governed by Delaunay Triangulation protocol. The paper presents an algorithm to build each peer with Delaunay links incrementally by including random peers returned from P2P network querying or accessing the same content. The algorithm is then optimized by considering the Euclidean distance between peers to speed up the overlay convergence thus improving content loading delays at same time supporting many other peers. A practical implementation of the proposed system validates our claim.

Index Terms: **Delaunay triangulation, Cool Streaming, multicasting, random peers, P2P network querying, peer-to-peer technology.**

I. INTRODUCTION

Due to lack of video streaming in earlier technologies we will introduce the IPTV Network for sending information to more no. of clients using single server file sharing. IPTV is a system through television services are delivered using Internet Protocol suite packet switched network such as Internet. But it is a centralized system for file sharing. Due to this property we will introduce the P2P Network for file sharing

P2P Network have the following properties:.

1. The end-to-end delay between the source and receiver to be excessive because they have number of intermediate receivers for file sharing.
2. Efficient use of network resources but resource is small due to limitation of resource, it is very important to increase the scalability of the system with large system process.

It is a type of decentralized and distributed network architecture in which every node act as a both supplier and consumer for file sharing. In Peer to Peer network tasks are shared among multiple interconnected peers which may take a position of their resources directly available to the other network Peer to Peer network can be implement some of the overlay networks on the top of the physical network topology where nodes are overlay from the subnet of the nodes in the physical network. Overlays are used for indexing and peer discovery and make the P2P system independent from the physical network topology.

Figure 1: Overlay Peer to Peer Network.

We are sending information from server resources to various clients using peer to peer overlay network. Preceding this information we will send the relevant file sharing using same resources. For that purpose we are using P2P TV, it will be used for only conventional networks, i.e it is only support for traditional approach in P2P TV networks. It will not support for commercial file sharing in P2P networks. In this region we are introducing Zattoo P2P network. Zattoo P2P sharing is the main solution for Commercial network file sharing as compared to conventional network. In this paper we will introduce Delaunay Triangulation Protocol governed by the P2P networks. We are arranging all the peers with equivalent file sharing with same time. By using our proposed work we will increase the performance of the file sharing system in between the peers.

II. RELATED WORK

The general approach for self organize applications into logical overlay network and transfer data along with the edges of overlay network based unicast services. In peer to peer networks we are providing three types of distributed services are generated, they are tree based push schemas, mesh based push schemas and distributed based file sharing schemas. In general our using network Zattoo like PPLive, PPStream, Sop Cast, TV Ants, and UUSee from China, and Joost, Livestation, Octoshape, and RawFlow another networks are present in the sequence of file sharing process.

Figure 2: Zattoo Network architecture in live streaming.

Zattoo has increased the streaming quality of its android app recently and can now provide much better and stable streams including HD quality for our Android users. Our proposed technique is unique that are able to collect network core data from a large production system with registered users knowledge. We are increasing the performance of the streaming with single resource in server. For this purpose we are introducing Delaunay triangulation protocol version for equal sharing in peer to peer network. a Delaunay triangulation, for a set of points in plane can be arranged in the triangulation DT(p).It will maximize the minimum angles of all the angles of triangle.

III. EXISTING SYSTEM

P2PTV based live streaming services offered by Commercial peer-to-peer systems like Zattoo act as alternatives to conventional viewing On 5 August 2008, Zattoo asked its Spanish users for a €2.40 charge by SMS in order to continue with the service during August and September. In March 2009, Zattoo removed its services from Belgium in an attempt to keep its costs down. Offers Decent Performance at higher costs. For performance improvement in systems like Zattoo a receiver-based, peer-division multiplexing engine involving repeater nodes to deliver live streaming content on a p2p network was developed. But repeater nodes implementation is a huge drain on financial resources and can only be handled by commercial systems like Zattoo. P2P systems are usually classified as either tree-based push or mesh-based swarming. In tree-based push schemes, peers organize themselves into multiple distribution trees. In mesh-based swarming, peers form a randomly connected mesh, and content is swarmed via dynamically constructed directed acyclic paths. Zattoo is an hybrid implementation of the above to systems. Such an implementation can only be handled by commercial systems like Zattoo but this approach happens to be a resource drain especially considering small and medium scale systems.

IV. PROPSED SYSTEM

Earlier technologies are not sufficient for free live P2P streaming because those technologies not cost effective. Extending this approach to live free P2P Streaming systems at reduced costs and achieving optimal performance is required. So we proposes an algorithm to build each peer with Delaunay links then they are also sending same content of information to our networks. Our proposed algorithm is optimized the Euclidean distance between peers to speed up the overlay virtual streaming.

This approach reduces content loading delays supporting to the other peers present in the network using Delaunay Triangulation assurance sending information in the same time. Delaunay triangulation has most attractive for triangulation due to its special features circumscribed circle of triangle must not contain other points than the points of the original triangle.

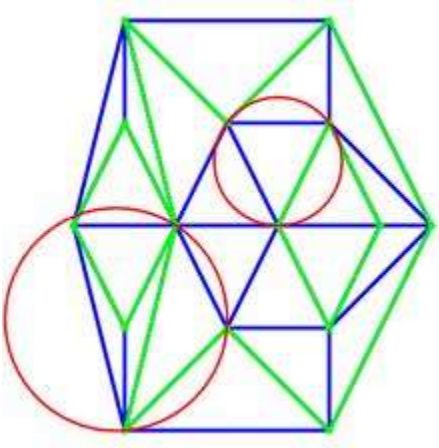

Figure 3: Delaunay Triangulation Overlay Network Architecture.

As shown in fig 3 we will describe the following things

1. Same equivalent time sharing presented in the connection between each peers.
2. Increase the performance of the overlay network in P2P streaming.

By using polygons in Delaunay triangulation, gives a nice set of triangles to the other objects.

V. EXPERIMENTAL RESULTS

In computational geometry well known topics conclude with set of points presented in the finite elements for modeling shape representation terrain modeling volume rendering and computer vision. Increasing the research in Delaunay triangulation, time Complexity is the main aspect present in file sharing.

```
Procedure ParDeTri (P: Pointset,DE_List : edge_list,var Partial_DT_List : Trangle_List);
Var
        e:edge;
        t:triangle;
 begin
        while notempty(DE_list)do begin
        e :=Extract(DE_List);
        t :=Make Triangle(c.P);
if(t!=null then begin
        Insert(t, Partial_DT_List);
        Foreach(e);
        Update(e,DE_List);
        End;
    End;
End;
Procedure Update(e : edge,var L : edge_list);
Begin
        If(eЄL then Delete(e,L)
        Else Insert(e,L);
End;
```

Figure 4: Proposed Parallel algorithm for Delaunay triangulation protocol.

Step 1: By using this region calculate the each vertex method for assigning values into the disjoint processor.

Step 2: Each processor executes the procedure in the above algorithm for its assigned values.

The function MakeTriangle() (in fig 4) generates Delaunay triangle from a Delaunay edge selecting the points with minimized values. The proposed algorithm implemented in the INMOS TRAM networks it has 32 T800 processors. Our input point sets for the experiment are generated by using various distributions: uniform distribution, normal distribution, bubble distribution and the narrower lengths respectfully. The execution time of ParDeTri () is approximately the same across the partitioning methods and the distributions. Uniform distribution takes more time to other networks present in the P2P networks.

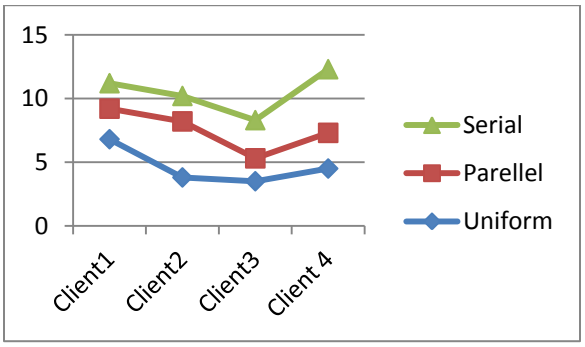

Figure 5: Performance analysis for Clients with equivalent file distribution.

As shown in the above diagram, first we are running the server using some third party software essentials in the P2P Zattoo networks. In this achievement we will give input as the video streaming describing with different clients. First we are sharing video with first client then we will notice the time for using that information by client one. After that each client share same video then we are calculating the time with each video it will gradually decrease for every 3 clients video sharing because we are defining Delaunay triangulation protocol for every three users sharing data aspect results. Using these results we increasing the performance of the Zattoo network every 3 users.

VI. CONCLUSION

P2PTV based live streaming services offered by Commercial peer-to-peer systems like Zattoo act as alternatives to conventional viewing. On 5 August 2008, Zattoo asked its Spanish users for a €2.40 charge by SMS in order to continue with the service during August and September. In March 2009, Zattoo removed its services from Belgium in an attempt to keep its costs down. P2P systems are usually classified as either tree-based push or mesh-based swarming. In tree-based push schemes, peers organize themselves into multiple distribution trees. In mesh-based swarming, peers form a randomly connected mesh, and content is swarmed via dynamically constructed directed acyclic paths. Zattoo is an hybrid implementation of the above to systems. Such an implementation can only be handled by commercial systems like Zattoo but this approach happens to be a resource drain especially considering small and medium scale systems. In this paper we proposes an algorithm to build each peer with Delaunay links incrementally by including random peers returned from P2P network querying or accessing the same content. The algorithm is then optimized by considering the Euclidean distance between peers to speed up the overlay convergence. This approach reduces content loading delays significantly at the same time supporting many other peers thus attaining performance and scalability parameters.

VII. REFERENCES

[1] J. C. Cavendish, Planar Domains for finite element method using Automatic Triangulation, Int. J. for Numerical Methods in Engineering 8 (1974) 679{696.
[2] H. J. Choi, “An optimization algorithm for implementation of a flight path system in triangulation network”, MS. Thesis, POSTECH, 1996.
[3] K. Shami *et al.*, “Improve the P2P Network Scalability Due to impact of the Peer Characters,” in *Proc. IEEE INFOCOM Mini Conference*, April 2009.
[4] J. Liang and K. Nahrstedt, “Improvement of the Locality of peer to peer streaming using Dagstream,” in *Proc. SPIE Multimedia Computing and Networking*, January 2006.
[5] R. Rejaie and S. Stafford, “Peer to Peer Receiver overlay networks using architecture Framework,” in Proc. ACM NOSSDAV, 2004.
[6]“Distributed Delaunay Triangulation based on efficient and accurate protocols,” The Univ. of Texas at Austin, Dept. of Computer Sciences, Tech. Rep. TR-07-59, November 2007, revised Sepetember 2008.