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The Extent of as Path Inflation by Routing Policies

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Abstract

Overlay routing is a very attractive scheme that improves TCP performance and delay between peer to peer. In this we are considering the imaginary path if there is no physical path between the nodes, that decreases the delay and increases the TCP performance. In earlier days also we are using overlay routing including schemes like BGP routing etc. But in those days they didn't consider the optimization of paths and TCP performance. In this paper we rigorously study the optimization problem and TCP throughput . We examine the practical aspects of the scheme by using several scenarios. The first one is BGP routing, the main scheme is occurance of INFLATED PATHS in overlay routing. The second one is TCP performance ,the RTT(Round Trip Time) and TCP performance are correlated to each other and the third one is VOIP(Voice Over Internet Protocol) , it carries voice from end to end . So we can significantly reduce the maximal peer-to-peer delay by using relay nodes.

Keywords:overlay network, resource allocation,underlay network,vertex cut.

1. Introduction

Overlay routing has been proposed in recent years as an effective way to achieve certain routing properties ,without going into the long and tedious process of standardization and global deployment of a new routing protocol.we concentrate on this point and study theminimum number of infrastructure nodes that need to be added in order to maintain a specific property in the overlay routing. we define a general optimization problem called the Overlay Routing Resource Allocation (ORRA) problem.

The first scenario we consider is AS-level BGP routing ,where the goal is to find a minimal number of relay node locations that can allow shortest-path routing between the source–destination pairs. . Recall that routing in BGP is policy-based and depends on the business relationship between peering ASs, and as a result, a considerable fraction ofthe paths in the Internet do not go along a shortest path.This phenomenon, called path inflation, is the motivation for this scenario.

The second scenario we consider is the TPC improvement. In this case, we test the algorithm on a synthetic random graph, and we show that the general frame work can be applied also to this case, resulting in very close-to-optimal results.

The third scenario addresses overlay Voice-over-IP (VoIP)applicationssuchasSkype(http://www.skype.com), GoogleTalk(http://www.google.com/talk/), and others .Such applications are becoming more and more popular offeringIPtelephoneservices.

2. ExistingSystem

A resilient overlay network (RON), which is architecture for application-layer overlay routing to be used on top of the existing Internet routing infrastructure, has been presented.This work mainly focuses on the overlay infrastructure (monitoring and detecting routing problems, and maintaining the overlay system), and it does not consider the cost associated with the deployment of such system.

2.1 Proposed System

we concentrate on this point and study the minimum number of infrastructure nodes that need to be added in order to maintain a specific property in the overlay routing. From this undergoing in to overlay path leads to improve the delay latency cost and TCP performance is good .

2.2 Advantages of Proposed System

- We are only interested in improving routing properties between a single source node and a single destination, then the problem is not complicated, and finding the optimal number of nodes becomes trivial since the potential candidate for overlay placement is small, and in general any assignment would be good.
- When we consider one-to-many scenarios,then a single overlay node may affect the path property of many paths,and thus choosing the best locations becomes much less trivial.

2.3 Disadvantages of Existing System

- In order to deploy overlay routing over the actual physical infrastructure, one needs to deploy and manage overlay nodes that will have the new extra functionality.
- This comes with a non negligible cost both in terms of capital and operating costs.

3. Figures and Equations

3.1Figure

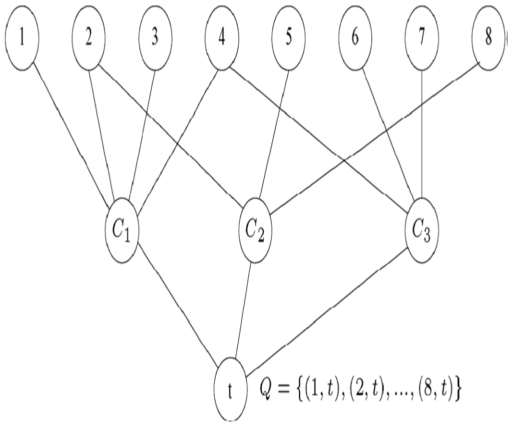

Fig. 1 ORRA Reduction

3.1 Equations

Consider an equation,

$W(U)=\sum m_{i.}\in_i= (\sum\in_i).(\sum m_{i.}\in_i)/\sum\in_i$Eq.(1)

$\leq W(U_{opt}).\sum(m_{i.}\in_i)/\sum\in_i$Eq.(2)

$=W(U_{opt})$. Eq.(3)

Where m_i is the maximum vertex cut,W is the weight of the two vertices,U_{opt} is the optimal solution,$\in_i$is the size cut.

From this we can calculate shortest path distance.

4. Conclusion

we addressed this fundamental problem developing an approximation algorithm to the problem. Rather than considering a customized algorithm for a specific application or scenario, we suggested a general framework that fits a large set of overlay applications.

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References

[1] H. Pucha and Y. C. Hu, "Overlay TCP: Multi-hop overlay transportfor high throughput transfers in the Internet," Purdue University, West Lafayette, IN, USA, Tech. Rep., 2005.

[2] D. Andersen, H. Balakrishnan, F. Kaashoek, and R. Morris, "Resilient overlay networks," in *Proc. 18th ACM SOSP*, 2001, pp. 131–145.

[3] S. Savage, T. A. A. Aggarawl, T. Anderson, A. Aggarwal, D. Becker,N. Cardwell, A. Collins, E. Hoffman, J. Snell, A. Vahdat, G. Voelker, and J. Zahorjan, "Detour: A case for informed internet routing andtransport," *IEEE Micro*, vol. 19, no. 1, pp. 50–59, Jan.–Feb. 1999.

[4] R. Cohen and A. Shochot, "The "global-ISP" paradigm," *Comput.Netw.*, vol. 51, no. 8, pp. 1908–1921, 2007.

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