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Exploiting a Protocol at network frame to avoid packet failure

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Abstract— **.** The concurrent data communication which depends upon congestion control in internet without packet failure very much difficult *,it straight away signifies an incompetent design to show insecurity and reduced performance. There should some mechanism to control packet lass to avoid quality of services while interpretation media rich content..* Data communication needs major role of network congestion. congestion control algorithm which is the mechanism helps in controlling packet loss which gives good performance of the network. There are many protocols which work as supplement the TCP protocol. These protocol helps to avoid the network congestion. The *fair service with open – loop controller built by CSFQ has in progress corrosion in quality as P2P flows conquered internet traffic of late. Token-Based Congestion Control (TBCC) which is the closed loop congestion control was able to limit unbearable resources and give best service to end users. It monitors inter-domain traffic for trust relationships. The new mechanism presents Stable Token-Limited Congestion Control (STLCC). for controlling inter-domain congestion and improve network performance. In this paper we apply the STLCC method. We exploit a proto type application that demonstrates the proof of concept*

Index Terms— **P2P, Congestion Control, Congestion-Index, CSFQ, TBCC, Re-feedback, Inter-Domain, TLCC.**

NETWORK CONGESTION:

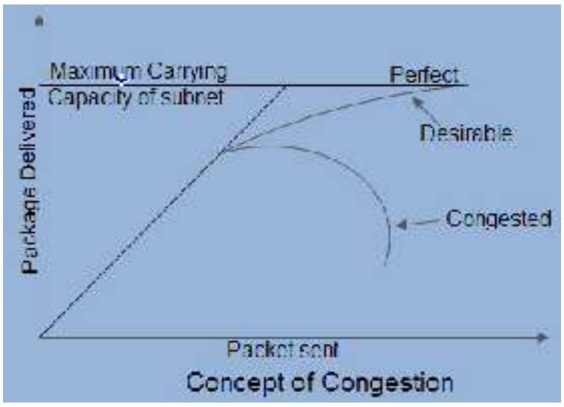
Congestion results in the network, when the subnet of the network becomes overloaded. Compare to forward the packets, the router receive the packets very fast. The congestion region must prevent by entering additional packets until all the packets in the region should be processed. The subnet must prevent additional packets from entering the congested region until those already present can be processed.

The congested routers can discard queued packets to make room for those that are arriving.

Factors that Cause Congestion

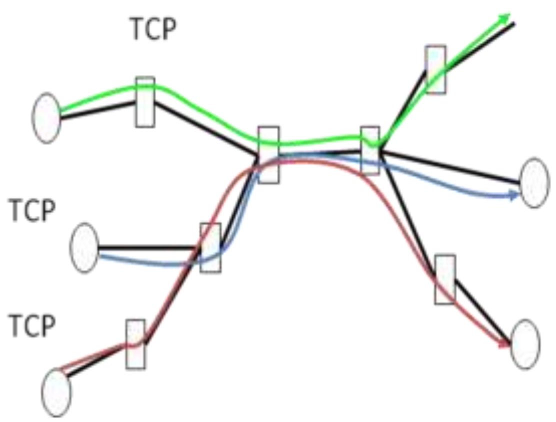
- The outgoing link capacity exceeds by Packet arrival rate
- insufficient memory to store incoming packets
- Bursty traffic
- Slow processor

Congestion occurs when the number of packets being transmitted through the network approaches the packet handling capacity of the network .Congestion control aims to keep number of packets below level at which performance falls off dramatically



Introduction

In today's Internet congestion control is achieved by relying TCP which is an end -to-end protocols.



*www.cs.tau.ac.il/~mansour/networking-2006/Icc10.**ppt***

- dynamically estimates network state
- packet loss signals congestion
- reduces transmission rate in presence of congestion
- routers play little role

This approach requires little support from routers, and therefore can be capably implemented speeds at high. To avoid this approach to work it is critical that, all end-host **cooperate** - otherwise, well-mannered flows are not protected against ill- mannered flows, can get hold of all resources. End-hosts apply **homogeneous** control algorithms - otherwise, users implementing more aggressive control algorithms can get unfair advantage.

To address this problem, we propose a network architecture and an algorithm, called *Core*-Stateless Fair Queueing (**CSFQ**), that significantly reduces the implementation complexity yet still achieves approximately fair allocations. The structural design differentiates between **edge** and **core** nodes.

Edge nodes follow per flow management but core node does not follow the per flow management so implementation can made efficient at high speeds. Edge node s are very simpler as compare to regular queueing.

*Core-Stateless Fair Queuing (CSFQ) set up an open- loop control system at the network layer, which inserts the label of the flow arrival rate onto the packet header at edge routers and drops the packet at core routers based on the rate label if congestion happens .At core router to achieve approximat**e** fair bandwidth allocation among flows with O (1) complexity started by CSFQ.*

It has turn into powerless when, the P2P flows started to govern the traffic of the Internet. Token-Based Congestion Control (TBCC) is based on a closed-loop congestion control principle, which restricts token resources consumed by an end-user and provides the fair best effort service with O(1) complexity.

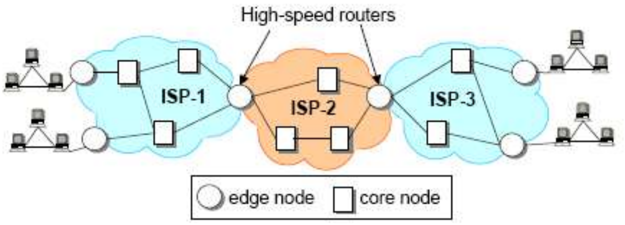


Fig. 1. Diffserv and SCORE network architectures.

To overcome this problem the TBCC has to append inter-domain congestion control by introduces new protocol called stable-Token-Limited Congestion Control. So that the TBCC that it makes congestion control system to be stable

STABLE TOKEN LIMIT CONGESTION CONTROL (STLCC):

With O(1) complexity,STLCC is able to outline output and input traffic at the inter-domain link

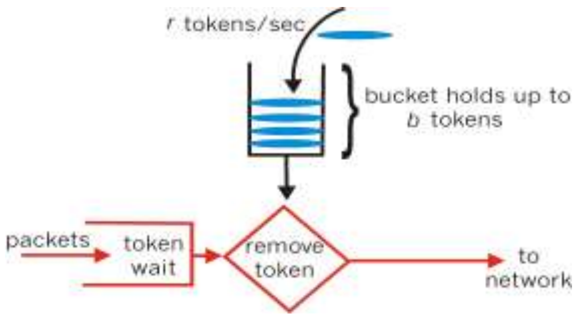
The congestion index which is produced by STLCC and pushed the packet lost to the network edge. From this the performance of network will be improves. The collision problem is solved by this STLCC.

STLCC is working by adding the both algorithm of TLCC and XCP together. The algorithm of XCP controls the output rate of sender. Therefore there is no chance of packet lost at the congestion link. Meanwhile, the entry token recourses are distributed to incoming flows equally by edge routers.

When congestion happens, the incoming token as well as congestion levels both increases in core router and congested link respectively. STLCC helps in overcrowding stage sensibly, according to the access link it distributes network resources, it retains the congestion control system stable.

TOKEN :

In this paper the token is a digital number in the Option Field of the datagram of the packet, which is written by the core and Edge routers when measure of the quality of services guaranteed by the router. This token number is read by the path routers and this value measures the congestion. Based on this the edge router in the source will reduce the congestion.



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CORE ROUTER:

A core router is a computer communication system device and a network's backbone. It provides multiple fast data communication interfaces. The word "core" refers to a network's overall physical structure. That forwards packets to computer hosts within a network(but not between networks) some it contrasted with an edge router which routes packets between a self-contained network and other outside networks along a network backbone.

EDGE ROUTER:

The special router called edge router which is residing at the edge or border of a network. The connectivity of the network and even with the external network is ensured by this edge network. This router uses the outside the border gateway protocol can be used very extensively over the internet to supply the connectivity with outside networks. Instead of only if message with an internal network, which the core router already manages, an edge router may provide communication with different networks and autonomous systems. Edge routers use External BGP Protocol for data transmission because they are intermediary devices between two different networks and operate at the external or border layer of the network. There are a number of edge routers, together with edge routers positioned at the outer boundary of the network as an essential device for connecting the host network with the Internet. Without knowledge of the host administrator, when a node sends data on a network the data packet is sent to the last router on the authorized network which is edge router.

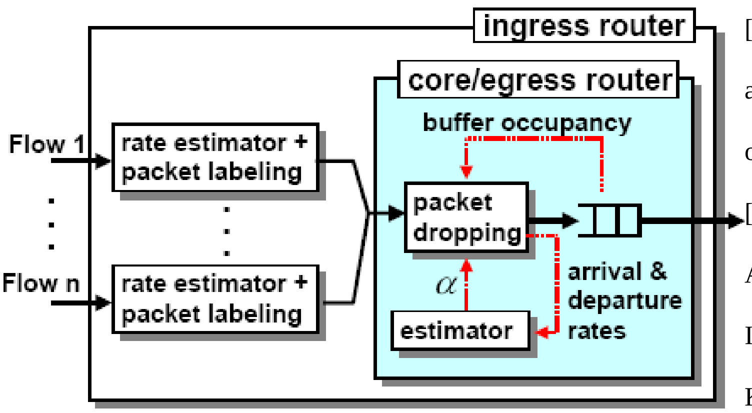

Fig. 2. The architecture of the output port of an edge router, and a core router respectively.

*web.cs.wpi.edu/~rek/Adv_Nets/Fall2014/**CSF Q_F14**.pd*

Conclusion:

Deployed on the present Internet. STLCC can weigh up Congestion stage logically and assign network resources according to the access link that leads to firm Congestion control system. The network with constant Congestion control leads to the high-quality performance and it will be achievable to construct a network with restricted number of resources having fast transmission of data with correctness and no delay.

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