

# ANALYSIS OF CONGESTION CONTROL ALGORITHMS

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### **■** What is congestion?

When the "offered load" crosses certain limit, then there is a sharp fall in the throughput.





"when too many packets are present in the network, the performance degrades. This situation is known as congestion"

Tanenbaum

### MECHANISMS FOR CONGESTION CONTROL





- Accumulation-based congestion control.
- Internet congestion control.
- Data Cast.
- Mutipath TCP algorithms.
- A connectionless congestion control algorithm.
- Multipath routing algorithms for congestion minimization.
- TCP congestion control algorithms.

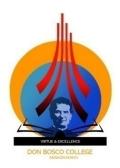
### ACCUMULATION-BASED CONGESTION CONTROL





- ACC Model
- Two possible schemes under this model is
  - > TCP Vegas
  - > TCP Monaco
- Vegas emphasis packet delay.
- Monaco provides an out-of-order receiver based accumulation estimator.

### INTERNET CONGESTION CONTROL





- Novel estimation algorithm.
- It is based on online parameter identification technique.
- Used in design of congestion control protocols.

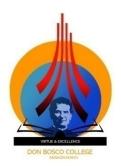
#### **DATA CAST**





- RGDD
- There are two design spaces
  - > Multiple edge disjoint Steiner trees.
  - > Soft-state based congestion control algorithm.
- Few duplicate data transmission.

#### MULTIPATH TCP ALGORITHM





- It proposes a fluid model.
- It identify the uniqueness and stability of system equilibrium.
- It greatly improves application performance.
- Using multiple paths transparently.

## A CONNECTIONLESS CONGESTION CONTROL ALGORITHM





- It operates from the IP layer.
- This model provide routing algorithm.



### MUTIPATH ROUTING ALGORITHMS



- Route all traffic along a single path
- Reduce congestion in "hot spots"
- Split traffic based on flow control
- Practical restriction
  - Establishing, maintaining, and tearing the path
  - **≻**Complexity

### TCP CONGESTION CONTROL ALGORITHMS





- It favors reliability.
- TCP is efficient and responsive to network congestion conditions.

#### **CONCLUSION**





- TCP based methods are much better than others.
- It provides more scalability, better throughput and loss of packet is less and provide reliability.

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### **THANK YOU**

