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Title: Simulation Results for ERICA Switch Algorithm  
with VBR+ABR traffic

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Abstract:  
This contribution discusses the issues raised by the presence of VBR  
and presents simulation results for the ERICA switch algorithm.

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Source:  
  
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EFFECT OF VBR:

Most network links are shared by ABR and VBR traffic with VBR  
traffic taking higher priority. However, most simulation results  
presented so far assume only ABR traffic. This contribution  
discusses the issues raised by the presence of VBR and presents  
simulation results for the Explicit Rate Indication for  
Congestion Avoidance (ERICA) switch algorithm [1].

Presence of VBR traffic introduces uncertainty about the  
available link capacity for ABR. The capacity available for ABR  
changes continuously and must be estimated continuously. Unless  
the switch algorithm provides a quick response to these changes,  
the link may be underloaded or overloaded for a long time  
resulting in low throughput or high delay.

We modified the ERICA algorithm to include an estimation algorithm for the available capacity and simulated it with the presence of VBR traffic. The VBR traffic consists of a simple square wave which is on for  $x$  ms and off for  $x$  ms for various (small) values of  $x$ . The cycle is repeated continuously. The simulation results show that ERICA responds very fast to these changes.

Simulation results will be presented for several configurations in both LAN and WAN cases.

REFERENCES:

[1] R. Jain, S. Kalyanraman, R. Viswanathan, and R. Goyal, "A Sample Switch Algorithm," AF-TM 95-0178R1, February 1995.