



SCALABLE RESOURCE RESERVATION AND ADMISSION CONTROL

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Improving the ability of today's networks to provide cost efficient mechanisms for providing Quality of Service (QoS) guarantees is the the focus of this work. Specifically, this work proposes mechanisms to provide bandwidth and loss guarantees. Cost is regarded in the context of QoS mechanisms that scale in the network core where routers process orders of magnitude more flows than edge-routers. Cost metrics include time taken to establish a reservation, amount of per flow state maintained by routers, amount of signalling needed to establish a reservation and the asymptotic efficiency of the packet scheduling algorithm. This work builds upon advances made with the flow aggregation techniques that were introduced by Differentiated Services (Diff-Serv) research, advances in measurement-based admission control and FIFO queueing techniques used to preserve established QoS guarantees.