

Design and Performance Evaluation of an Improved TCP Congestion Avoidance Scheme

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Abstract

TCP Vegas detects network congestion in its early stage and successfully prevents the periodic packet loss that usually occurs in traditional schemes. It has been demonstrated that TCP Vegas achieves a much higher throughput than TCP Reno. However, TCP Vegas cannot prevent unnecessary throughput degradation when congestion occurs on the backward path. A router-based congestion avoidance scheme for TCP Vegas is proposed. By distinguishing whether or not congestion occurs in the forward path, it significantly improves the connection throughput when the backward path is congested.