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TCP Westwood

TCP Westwood (TCPW) is a sender-side-only modification to TCP New Reno that is intended to better handle large bandwidth-delay product paths (large pipes), with potential packet loss due to transmission or other errors (leaky pipes), and with dynamic load (dynamic pipes).

TCP Westwood relies on mining the ACK stream for information to help it better set the congestion control parameters: Slow Start Threshold (ssthresh), and Congestion Window (cwin). In TCP Westwood, an "Eligible Rate" is estimated and used by the sender to update ssthresh and cwin upon loss indication, or during its "Agile Probing" phase, a proposed modification to the well-known Slow Start phase. In addition, a scheme called Persistent Non Congestion Detection (PNCD) has been devised to detect persistent lack of congestion and induce an Agile Probing phase to expeditiously utilize large dynamic bandwidth.

The resultant performance gains in efficiency, without undue sacrifice of fairness, friendliness, and stability have been reported in numerous papers that can be found on The TCP WESTWOOD Home Page (http://www.cs.ucla.edu/NRL/hpi/tcpw/). Significant efficiency gains can be obtained for large leaky dynamic pipes, while maintaining fairness. Under a more appropriate criterion for friendliness, i.e. "opportunistic friendliness", TCP Westwood is shown to have good, and controllable, friendliness.

TCP Westwood plus is an evolution of TCP Westwood, in fact it was soon discovered that the Westwood bandwidth estimation algorithm did not work well in the presence of reverse traffic due to ack compression. The TCP Westwood+ version is implemented in the Linux kernel.

See also

- TCP Westwood+
- TCP congestion avoidance algorithm
- Development of TCP

External links

- TCP Westwood (http://c3lab.poliba.it/index.php?title=Westwood) Home Page.