Network Bandwidth Capacity Measurement Tool with LinkWidth

Technology #m07-029

Bandwidth Capacity Measurement Tool with Single End TCP Probes

• LinkWidth is a tool and method for estimating capacity and available bandwidth using single end controlled TCP packet probes.

• To estimate capacity, a train of TCP RST packets sandwiched between two TCP-SYN packets is generated. Capacity is obtained by end to end packet dispersion of the received TCP-RST/ACK packets corresponding to the TCP-SYN packets. TCP-RST packets do not generate additional ICMP replies reducing and ideally preventing cross traffic interference with our probes.

• In addition, TCP packets are used for the probes to prevent some types of quality of service (QOS) related traffic shaping from affecting the measurements. Furthermore, the train of packet pairs technique is expanded to approximate the available link capacity. The pairs of TCP packets are used with variable intra-pair delays and sizes.

• This is the first attempt to implement this technique using single end TCP probes, tested on a wide range of real networks.

Inventors

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