Hybrid Multipath Congestion Control

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Abstract : Multiple Path Transmission Control Protocols (MPTCPs) allow flows to explore path diversity to improve the throughput, reliability and network resource utilization. However, the existing solutions may discourage users to adopt the solutions in the face of multipath scenario where different paths are charged based on different pricing structures, e.g., WiFi vs cellular connections, widely available for mobile phones. In this paper, we propose a Hybrid MPTCP (H-MPTCP) with a built-in mechanism to incentivize users to use multiple paths with different pricing structures. In the meantime, H-MPTCP preserves the nice properties enjoyed by the state-of-the-art MPTCP solutions. Extensive real Linux implementation results verify that H-MPTCP can indeed achieve the design objectives.

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