



RESEARCH ARTICLE

Analysis of Buffer Sizing in Core Routers and Investigating Its Impact on Flow of Files

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Abstract— Buffer sizing has received a lot of attention recently since it is becoming increasingly difficult to use large buffers in high speed routers. TCP dictate buffer size in the routers must be in the order of band width delay($C*RTT$) Product. It can be scaled down to ($C*RTT/\text{Square root}(N)$) or $O(1)$ with N long lived connections on the internet. In this paper, we re-examine the buffer-size requirements of core routers when flows arrive and depart. We are arriving at two insights. First, when the core to access speed ratio is large $O(1)$ buffer size is efficient in a network. Second, the two parameters buffer sizes and number of flows in the system should not be treated as individual quantities.

Key Terms: - Buffer sizing; core routers; core-to-access speed ratio

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