

SOP: Smart Offloading Proxy Service for Wireless Content Uploading over Crowd Events

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Abstract—Since commercialization of the Internet in mid-1990, human culture has changed dramatically due to booming of innovative online services. To cope with demands of network service providers to effectively and efficiently deliver contents and services to their clients, content distribution network technologies have been developed. These technologies have been optimized to transfer data from servers to users. It is not meant to support mobile users to upload and share real-time captured multimedia contents with his/her peers through social network services. It is even more difficult for the current network to support mobile users in a hot social event to shared live pictures and videos to their social network in real time. In this paper, we present our design of smart offloading proxy (SOP) service for wireless content uploading over crowd events. To test efficiency of SOP, we simulate a mobile network environment with wireless access network connected through a long-haul WAN to the target social network server. Preliminary experiments show that with an error rate of 1% in the WAN, a mobile user may experience long file-uploading time of approximately 100 seconds in uploading a 10 MB file when a 54 Mbps WIFI media is simultaneously accessed by users randomly arrived at the inter-arrival time of 10 seconds. In contrast, it takes less than 10 seconds to upload the file if the WIFI is lightly loaded and the WAN is error free. We also show that by properly scheduling WIFI bandwidth to the mobile users, the file-uploading time can be reduced.

Keyword—crowd events, mobile network, offloading service, proxy



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